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Forest Service

Tongass National Forest

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Shoreline Outfitter/Guide

Record of Decision and
Final Environmental Impact Statement

Volume II: FEIS (Chapters)



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Chapter 1

Key Terms

Carrying capacity (recreation) — The estimated maximum number of groups of people who could recreate in an area and still have a specified type of recreation experience.

Commercial use — Any use of the national forest for which a fee is charged by an outfitter/guide.

Environmental Impact Statement (EIS) — A statement of environmental effects of a proposed action and alternatives to it.

Proposed action — An initial proposal by a federal agency to authorize, recommend, or implement an action.

Recreation Opportunity Spectrum (ROS) — A system for planning and managing recreation that categorizes recreation opportunities into seven classes (see Appendix F).

Scoping — Early and open communication with the public used to determine the scope and significance of a proposed action, what level of analysis is required, what information is needed, and what level of public participation is appropriate.

Significant issue — Under NEPA, refers to issues that are used to formulate alternatives, prescribe mitigation measures, or analyze environmental effects.

Use Area — Distinct geographic areas used in this analysis as the basis for defining and managing recreation use.

Chapter 1

Purpose and Need

Introduction

Overview

The U. S. Department of Agriculture (USDA), Forest Service, has prepared this final environmental impact statement (Final EIS) on the potential effects of authorizing commercial outfitting and guiding activities on the shoreline of the Admiralty Island National Monument, and Hoonah, Sitka, and Juneau Ranger Districts on the Tongass National Forest, Alaska Region (Region 10). Direct, indirect, and cumulative environmental impacts and any irreversible or irretrievable commitment of resources that would result from the proposed action and alternatives are disclosed in this document. Five alternatives are analyzed and presented.

The Forest Service manages its lands to provide the public with a variety of recreation opportunities. We can influence the recreation experience by providing different settings for recreation, ranging from wilderness to fully accessible trails and campgrounds, and by providing different facilities, such as cabins, boat moorings or roads, that make an area more accessible. Through this analysis, we are working to manage the recreation setting by regulating the number of commercially guided groups using specific areas.

This EIS was prepared according to the Council of Environmental Quality (CEQ) regulations implementing the National Environmental Policy Act (NEPA; 40 CFR 1500–1508). The document structure is described below.

- Chapter 1 explains the purpose and need for the proposed action. It discusses how the Shoreline Outfitter/Guide EIS relates to the 1997 Tongass Land and Resource Management Plan (USDA Forest Service 1997b) and identifies the significant issues driving alternative development. The Tongass Land and Resource Management Plan, as amended, is referred to as the Forest Plan in this document.
- Chapter 2 describes and compares the proposed action, alternatives to the proposed action, and the no-action alternative.
- Chapter 3 describes the natural and human environments potentially affected by the proposed action and alternatives; the chapter also discloses the potential effects of the alternatives.
- Chapter 4 contains the list of the analysis team members, the Final EIS distribution list, references, glossary, and index.
- Appendices provide additional information and background on specific aspects of the proposed project.

This EIS tiers to the Forest Plan and its Final EIS (USDA Forest Service 1997) and incorporates other documents by summarization and reference where appropriate. Additional documentation, including resource analyses with more detailed information of the analysis area, may be found in the project planning record located

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at the Forest Supervisor's Office in Sitka, Alaska. Other reference documents such as the Forest Plan are available at public libraries throughout Southeast Alaska as well as at the Forest Supervisor's Office in Sitka. The Forest Plan is available on the Internet (www.fs.fed.us/r10/tlmp/) and on CD-ROM upon request.

The Tongass National Forest provides unparalleled outdoor adventure opportunities. Most recreation opportunities are dispersed in isolated, wild settings, although most of the actual recreation use on the national forest occurs at visitor centers and other developed sites.

Recreation and tourism are increasing on the Tongass National Forest. Commercial recreation has grown substantially in the past decade. Tourism is of growing economic importance to Southeast Alaska, creating employment and income opportunities throughout the region. Nature-based travel and tourism provide a window through which an increasingly urban society can enjoy and appreciate the natural world.

Outfitters and guides are important partners with the Forest Service because they provide equipment, services, and local knowledge and experience to national forest visitors who prefer or need to be guided. Because of the remote and rugged nature of Southeast Alaska, commercial outfitter/guide services provide one of the few ways some forest visitors can access the national forest.

The current Shoreline Outfitter/Guide analysis began with the expiration of the decision made from the *Chatham Area Outfitter/Guide Limited Use Environmental Analysis* in 1998 (USDA Forest Service 1993). Some people who responded during scoping were concerned that recreation growth would compromise values they feel are important, including: solitude; opportunities for primitive or semi-primitive experiences; and access to fish and wildlife for viewing, hunting, or fishing. Increasing numbers of recreationists may lead to crowding and displacement of residents and negatively affect fish and wildlife resources.

In response to one specific concern, the Forest Supervisor directed the District Rangers not allow additional brown bear hunts beyond what is already permitted by existing special use permits until a recreation carrying capacity was completed and decision for the management of all commercial recreation uses was made. This decision affects most areas included in this document.

The Forest Service first determined the total recreation carrying capacity of the analysis area, which is documented in the Shoreline-Based Recreation Carrying Capacity Analysis for the Admiralty Island National Monument, Hoonah, Juneau, and Sitka Ranger Districts on the Tongass National Forest 2001 (Carrying Capacity Analysis). (USDA Forest Service 2001) The carrying capacity is the number of groups of people, both guided and unguided, in an area that would be able to enjoy a specified recreation experience.

The carrying capacity was based primarily on Land Use Designations (LUD) and associated Recreation Opportunity Spectrum (ROS) classes identified in the Forest Plan, as well as potential access and anchorages. This EIS incorporates the carrying capacity in analyzing the potential effects of authorizing shoreline commercial outfitting and guiding activities within the analysis area.

Carrying capacity is the number of groups of people in an area who would be able to enjoy a specified recreation experience.

Proposed Action

The proposed action authorizes issuing commercial permits to shoreline-based activities (above mean high tide) on National Forest System lands.

A ‘proposed action’ was identified early in the process to briefly describe the actions and their magnitude. This proposed action authorizes the issuance of commercial outfitter/guide permits in the shoreline zone of the analysis area. It allocates a portion of the recreation carrying capacity to commercial outfitter/guide use and provides management direction to reduce the potential for user conflicts and protect forest resources. The proposed action provided the starting point for the interdisciplinary team (IDT) and helped focus public and other government agency comments. Comments were used to identify significant issues and develop alternatives to the proposed action.

The proposed action (Alternative 2) authorizes issuing commercial permits to shoreline-based activities (above mean high tide) on National Forest System lands located on the Admiralty Island National Monument, and the Hoonah, Sitka, and Juneau Ranger Districts.

Activities include but are not limited to: sightseeing, hiking, camping, photography, boating, hunting, freshwater fishing and nature viewing. These activities generally occur within one-half mile of the saltwater shoreline, or along streams and trails accessed from the shoreline. Commercial recreation activities are generally oriented to wild land experiences and are primarily boat-based, though some groups use floatplanes, helicopters or wheeled planes to access specific areas. Boats are also generally used as base facilities and for sleeping when activities are longer than day trips. If boats are not used for lodging, guided groups generally use tents and ‘leave-no-trace’ practices when camping. Group size is usually less than 12, although larger groups (both guided and unguided) may be present.

The proposed action allocates a specific amount of the recreation carrying capacity in units of group days to commercial use for each Use Area (Table 1-1) and each season. The allocation ranges from 5 to 40 percent of the total recreation capacity depending on the Use Area. Each allocation is based on factors such as the proximity of the Use Area to communities, the amount of subsistence use, and potential resource impacts. Commercial outfitter/guide use would be limited to 10 percent or less of the total recreation capacity during the spring and fall seasons to keep the number of social encounters low and to provide more opportunities for solitude. For more details on the proposed action, see Alternative 2 in Chapter 2.

While the Forest Service manages habitat conditions and social experience, commercial activities that involve taking fish or game are authorized under the regulations and harvest limits established by the Alaska Board of Game, Alaska Board of Fisheries, and the Federal Subsistence Board. If fish or game harvest levels begin to approach harvest limits, outfitter guides will be required to modify their operations in accordance with State and Federal fish and game regulations. In the event that hunting or fishing resources remain restricted for a prolonged period, the Forest Service may use a competitive process to allocate outfitter guide capacity.

1 Purpose and Need

Purpose and Need

The purpose of this action is to manage outfitter/guide use of the Tongass National Forest shoreline zone within the analysis area consistent with the Forest Plan. This management would balance commercial and non-commercial recreational opportunities and reduce the potential for user conflicts. Guided visitor use levels would be managed to maintain quality recreation experiences without causing unacceptable impacts to forest resources or the recreation experiences sought by both guided and unguided recreationists.

This action is needed to meet Forest Plan goals and objectives relating to recreation, tourism, and economic support to communities (see below); and to meet the increased demand for guided recreation while protecting the ecosystem. The Outfitter/Guide Limited Uses Environmental Assessment for outfitters and guides is outdated; current direction is provided on a case-by-case basis. Comprehensive, consistent direction is needed for managing commercial recreation use across the analysis area.

This action provides a comprehensive assessment of commercial use in the analysis area and a framework for reviewing and processing outfitter/guide requests. It supports the administration of the Forest Service Special Uses program through improved efficiency in issuing multi-year permits. The decision would define commercial opportunities covered by this analysis and provide a more streamlined process for authorization of permits the ability to issue priority use permits would also provide a more stable business environment to the recreation industry. Priority use permits can be issued for up to five years and are subject to re-issuance on a preferential basis at the end of their term.

Forest Plan goals and objectives applicable to the Shoreline Outfitter/Guide analysis area include those that provide for a range of recreation opportunities consistent with public demand, provide a diversity of opportunities for resource uses that contribute to the local and regional economies of Southeast Alaska, provide national forest visitors with visually appealing scenery, and allocate recreation use consistent with the ecosystem goals and objectives in the Forest Plan. Recreation-related goals and objectives are described in more detail in the Management Direction section of this chapter.

Decision Framework

Decision

The decision based on this EIS will authorize the issuing of commercial use permits on the national forest within the shoreline zone of the analysis area. The decision, which will be documented in a Record of Decision (ROD), will:

- specify the amount of the carrying capacity in units of group days that are allocated to commercial recreation use for each Use Area in each season,
- specify the types of commercial recreation activities permitted under this analysis,
- specify the type, number and location of areas where large commercial groups can occur and under what conditions,

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- specify the mitigation measures for commercial recreation activities to reduce user conflicts and resource impacts, and
- establish monitoring requirements.

The decision will not:

- regulate non-commercial or unguided use,
- address or authorize ground-disturbing activities, assigned sites, or other forms of development, or
- make allocations to specific commercial businesses.

Findings

This decision will also establish findings including the following:

- whether there may be a significant restriction on subsistence uses,
- whether the activities are consistent with the Alaska Coastal Zone Management Plan,
- effects on Essential Fish Habitat,
- effects on Threatened, Endangered and Sensitive Species, and
- effects on cultural heritage sites and areas.

Responsible Official

The Forest Supervisor of the Tongass National Forest is the responsible official who will sign the ROD. The responsible official may select any one of the alternatives in the Final EIS (including the no-action alternative) or a modified alternative (for example, combining parts of different alternatives), as long as the effects of the modified alternative have been fully analyzed and disclosed in the Final EIS.

Implementation

The decision will be implemented through the Special Uses administrative process. Commercial use permits will be authorized under the direction of the Special Uses Management Manual (FSM 2700) and Handbook (FSH 2709.11). Mitigation measures will be implemented through permit requirements and provisions, and administration and program monitoring. Monitoring will occur during and after the administration of Special Use permits and as part of program monitoring.

Outfitter/guide activities involving the taking of fish or game will be implemented under Alaska Board of Game, Alaska Board of Fisheries, and Federal Subsistence Board regulations.

When commercial use in specific Use Areas approaches the allocated levels, commercial requests for use may be redirected to other locations. If this measure is not sufficient to accommodate demand, resulting in a competitive interest, permits will be allocated among qualified outfitter/guides through a competitive process.

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Geographic Location and Boundaries

Description of the Analysis Area

The Shoreline Outfitter/Guide analysis area includes approximately 7,018,700 acres (Table 1-1) within the Admiralty Island National Monument, and the Hoonah, Sitka, and Juneau Ranger Districts on the northern half of the Tongass National Forest (Figure 1-1). This translates to approximately 5,280 miles of shoreline. The shoreline zone of the analysis area extends one-half mile inland from mean high tide. Nearly 983,060 acres of the shoreline zone is national forest.

Two areas on Admiralty Island were excluded from the analysis: Mitchell Bay and environs, which is the area surrounding the village of Angoon; and the Pack Creek Zoological Area. The Mitchell Bay and environs area has unique Alaska National Interest Lands Conservation Act (ANILCA) requirements, which require a separate analysis. Pack Creek Zoological Area has specific Forest Plan direction and is managed under a separate management plan. In addition, the national forest shorelines associated with the Juneau and Sitka road systems are not included in this analysis because they are managed within the developed recreation program.

The analysis area is divided into 38 geographical Use Areas (Figure 1-1). Thirty-seven of these Use Areas contain a shoreline zone and are described in detail in Appendix A. The remaining Use Area (01-04E) covers the Juneau Icefields, which do not have a shoreline zone.

Table 1-1. Total Acres of Each Use Area

Use	General Location	Acres	Use	General Location	Acres
01-01	Skagway Area	300,931	04-04B	Kelp Bay	134,900
01-02	Haines Area	20,065	04-04C	Baranof Warm	30,289
01-03	East Chilkats	376,318	04-05	SW Admiralty	115,125
01-04A	Berners Bay	271,903	04-06A	Pybus Bay	55,137
01-04B	N. Juneau coast	93,260	04-06B	Eliza Harbor	84,684
01-04C	Taku Inlet	344,594	04-07	Gambier Bay	205,726
01-04D	Slocum Inlet	17,210	04-08	NE Admiralty	130,459
01-04E	Juneau	724,218	04-09	Seymour Canal	87,778
01-05A	Taku Harbor	20,642	04-10A	Greens Creek	2,698
01-05B	Port Snettisham	372,752	04-10B	NW Admiralty	269,848
01-05C	Windham Bay	268,300	04-11	Hoonah Area	336,986
01-05D	Tracy Arm	625,105	04-12	Tenakee Inlet	345,711
01-05E	Fords Terror	24,374	04-13	Peril Strait	250,314
04-01A	Gut Bay, Baranof	138,639	04-14	Slocum Arm	79,339
04-01B	Port Armstrong	75,704	04-15	West Chichagof	253,675
04-02A	Redoubt Lake	55,990	04-16A	Point Adolphus	8,900
04-02B	Whaley	272,576	04-16B	Mud Bay	64,621
04-03	Sitka Area	388,739	04-16C	Idaho Inlet	52,521
04-04A	Lake Eva, Rodman Bay	87,891	04-16D	Port Althorp	30,807
Total Acres for All Use Areas = 7,018,710					

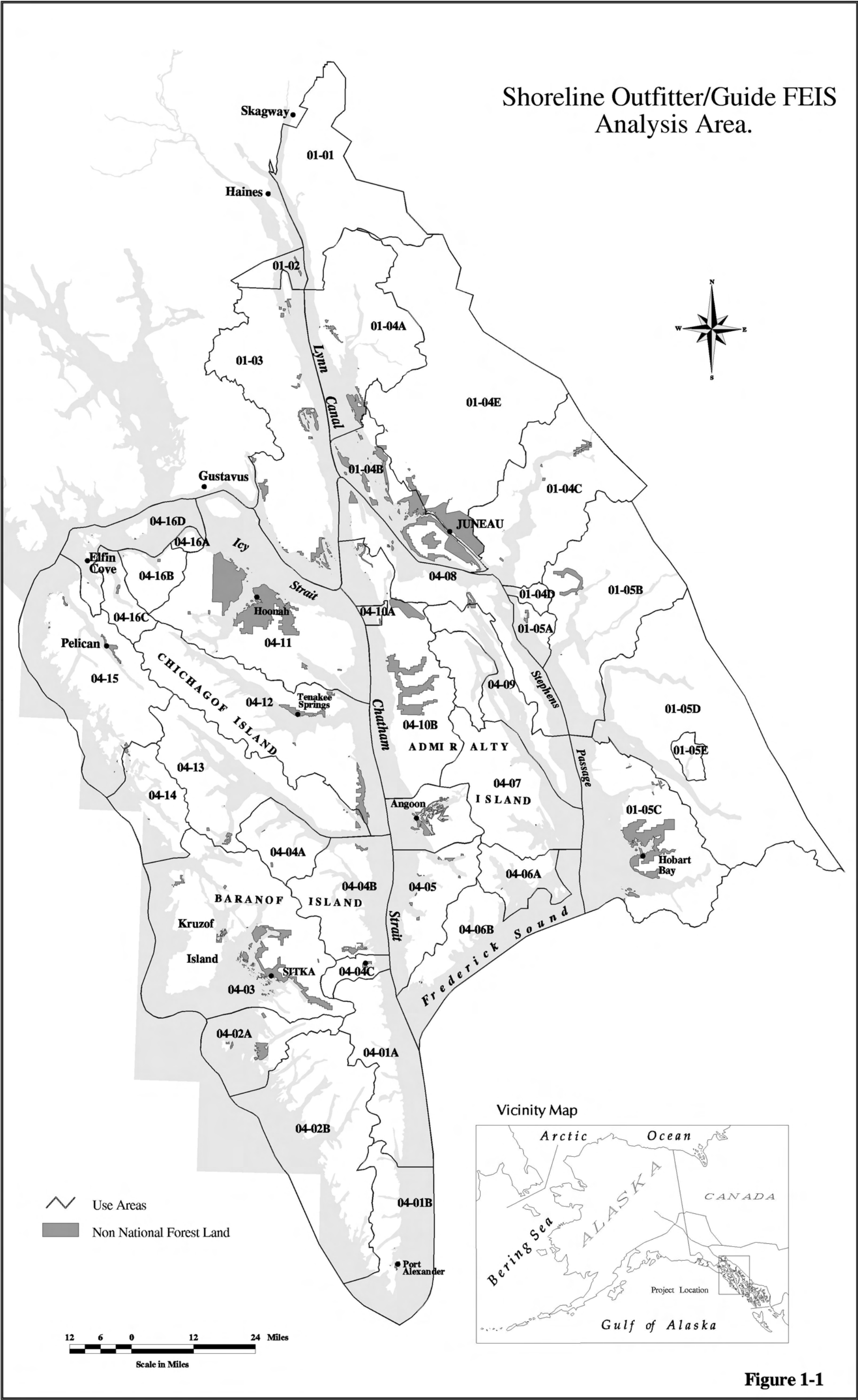


Figure 1-1

Purpose and Need 1

Previous Use

Visitors have been attracted to the Tongass National Forest to experience the wild scenery and bountiful fish and wildlife for more than a century. Excursion boats were plying the waters of Southeast Alaska as early as the 1890s. Although the area is considered wild and pristine, it has been influenced by human use, especially along the shoreline where access from saltwater is easy. Portions of the shoreline have been modified by the development of villages, canneries, salteries, mines, and timber harvest. Recreation development on the Tongass National Forest consists primarily of remote recreation cabins and shelters with primitive trails leading into the forest. Eleven communities lie within the analysis area, most of which have ferry service. Private, tribal, and state land is distributed throughout the analysis area in relatively small tracts and is often associated with some form of development.

Commercial recreation has occurred historically throughout the analysis area, although use has increased greatly in the past decade.

Current and Future Projects

This analysis considers current activities in or adjacent to the analysis area and activities that are likely to occur in the 'reasonably foreseeable future'. The timeframes of reasonably foreseeable future projects vary but tend to be ten years or less. Listed below are some past, present, and future analyses that may influence recreation management in the Shoreline Outfitter/Guide analysis area. They are incorporated into this analysis by reference.

- **The Shoreline Recreation Carrying Capacity Analysis for the Admiralty Island National Monument, Hoonah, Juneau and Sitka Ranger Districts on the Tongass National Forest 2001.** This analysis developed the recreation carrying capacity used in the Shoreline Outfitter/Guide analysis.
- **The Stikine Area Outfitter/Guide Environmental Assessment and Finding Of No Significant Impact (1996).** This decision allocated a portion of the carrying capacity to commercial outfitters and guides on the Petersburg and Wrangell Ranger Districts to the south of the analysis area.
- **KMRD Commercial Outfitter/Guide Authorizations EIS.** This decision will allocate a portion of the carrying capacity on the Ketchikan-Misty Fjords Ranger District to commercial outfitters and guides. A decision is anticipated in 2006.
- **Limited Use Outfitter/Guide EA (1993).** This environmental analysis authorized outfitter/guide use on the former Chatham Area administrative unit.
- **Supplement to the 1997 Tongass Land and Resource Management Plan—Roadless Area Evaluation for Wilderness Recommendations.** A March 2001 U.S. District Court Order required a Supplemental Environmental Impact Statement for the Forest Plan to evaluate and consider roadless areas for recommendations as potential wilderness. The Regional Forester for the Alaska Region selected the no-action alternative on February 24, 2003, which does not recommend additional areas for a wilderness designation for the Tongass National Forest. The analysis in the Final Shoreline EIS regarding the effects of outfitter/guide use on wilderness areas is based on that decision.
- **The Tongass National Forest Schedule of Proposed Actions (SOPA).** This Schedule of Proposed Actions lists the numerous near-term projects in or adjacent to the analysis area on the Tongass. The SOPA is published quarterly

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to notify the public of current and upcoming activities for which public input is requested (see Public Involvement section later in this chapter). The projects listed on the SOPA have been reviewed and considered in this analysis.

- **Alaska Department of Natural Resources Northern Southeast Area Plan (NSEAP).** The Northern Southeast Area Plan provides management direction for state lands in and adjacent to the analysis area.
- **Alaska Department of Natural Resources Juneau State Land Plan December 1993.** The Juneau Plan provides management direction for state lands surrounding the Juneau area.
- **State of Alaska Coastal Management Program (ACMP).** This program plan identifies management programs and processes for management of the Alaska Coastal Zone.
- **Sitka District Coastal Management Program (as amended).** This management plan identifies coastal resources, management objectives, and recreational opportunities for the City and Borough of Sitka.
- **Sitka Parks and Recreation Plan, City and Borough of Sitka, Alaska, 1991.** This plan identifies the recreation resources and objectives of Sitka City and Borough lands.
- **Hoonah Coastal Management Plan.** This coastal management plan identifies coastal resources, management objectives, and recreational opportunities for the City of Hoonah.
- **Angoon District Coastal Management Program.** This coastal management plan identifies coastal resources, management objectives, and recreational opportunities for the City of Angoon.
- **Juneau District Coastal Management Program.** This coastal management plan identifies coastal resources, management objectives, and recreational opportunities for the City and Borough of Juneau.
- **Haines Coastal Management Program.** This coastal management plan identifies coastal resources, management objectives, and recreational opportunities for the City and Borough of Haines.
- **Skagway Coastal Management Program.** This coastal management plan identifies coastal resources, management objectives, and recreational opportunities for the City and Borough of Skagway.
- **Revised Pelican Coastal Management Program.** This coastal management plan identifies coastal resources, management objectives, and recreational opportunities for the City of Pelican.

Management Direction

Forest Service Levels of Direction

Management direction governing this project comes from the national, regional, and forest levels. Direction becomes increasingly more specific from the national to the project level.

The Forest Service Strategic Plan incorporates the priorities of the Forest Service Natural Resource Agenda. These priorities include watershed health and restoration, sustainable forest management, the national forest road system, and recreation. The Strategic Plan (2000 Revision) outlines long-term goals and objectives that set the course and provide guidance for agency actions.

The Forest Service Recreation Agenda guides programs and activities to meet the recreation goals and objectives of the Strategic Plan. Recreation management on national forests is designed to meet the nation's present and future needs for outdoor recreation in a manner that protects the health, diversity, and productivity of the land.

The Forest Service Alaska Region Strategic Priorities provide emphasis and guidance in the key program areas of recreation and tourism, communities, Alaska Natives, and organization and employee effectiveness. The Regional Forester's strategic objective for recreation and tourism is for ecologically sustainable recreation and tourism to become a steady, reliable component of the economies of national-forest-dependent communities and other communities in Alaska.

From these priorities, the Regional Forester developed the Alaska Region Recreation and Tourism Strategic Plan. The Shoreline Outfitter/Guide analysis is a key task to implement the Recreation and Tourism Strategic Plan. Healthy, vibrant economies and good land stewardship are Alaska Region objectives.

Several regulations, manuals, and handbooks guided this analysis. Regulations governing commercial recreation fall under the Special Uses Program regulated under 36 CFR Part 251 – Land Uses. The following manuals and handbooks were also referred to during the analysis (see Appendix E for more details):

- Recreation, Wilderness, and Related Resource Management Manual (FSM 2300),
- Publicly Managed Recreation Handbook (FSH 2309.23),
- Recreation Facilities Handbook (FSH 2309.24),
- Trails Management Handbook (FSH 2309.18),
- Special Uses Management Manual (FSM 2700),
- Special Uses Handbook (FSH 2709.11), and
- The ROS Users Guide Handbook.

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Relationship to Forest Plan

National forest planning takes place at several levels: national, regional, forest, and project. The Shoreline Outfitter/Guide EIS is a project-level analysis; its scope is confined to addressing the significant issues and possible environmental consequences of the actions. It does not attempt to address decisions made at higher levels. However, it does implement direction provided at those higher levels. Where appropriate, the Shoreline Outfitter/Guide Analysis tiers to the Forest Plan.

The National Forest Management Act (NFMA) addresses the management requirements for all national forest resources and provides guidance in the preparation of the regional guide and forest plans. It also includes specific direction for the management of resources from a national perspective using the Resources Planning Act Assessment and Program to determine demand, supply, and the relative costs and benefits of both market and non-market outputs.

The Forest Plan sets forth direction for managing the land and resources of the Tongass National Forest. It is the result of extensive analysis documented in the Tongass Land and Resource Management Plan Final Environmental Impact Statement (FEIS) and 1997 Record of Decision.

Many of the Forest Plan standards and guidelines applicable to the Shoreline Outfitter/Guide analysis are listed under the Items Common to all Action Alternatives section in Chapter 2. Standards and guidelines are also discussed in Chapter 3 and Appendix E.

Goals and Objectives

The Shoreline Outfitter/Guide analysis is designed to achieve Forest Plan goals and objectives and move the analysis area toward the desired conditions. The Forest Plan includes forest-wide goals and objectives, as well as area-specific Land Use Designation (LUD) goals, objectives, and desired future conditions. Applicable forest-wide goals and objectives (see Forest Plan, pp. 2-3 through 2-5) include:

- Provide diverse opportunities for resource uses that contribute to the local and regional economies of Southeast Alaska.
- Support a wide range of natural resource employment opportunities within Southeast Alaska's communities.
- Provide a range of recreation opportunities consistent with public demand, emphasizing locally popular recreation places and those important to the tourism industry.
- Manage the Forest's recreation settings in accordance with the Recreation Opportunity Spectrum (ROS) standards and guidelines for each Land Use Designation (LUD).
- Provide for the continuation of subsistence uses by all rural Alaskan residents.
- Evaluate and consider the needs of subsistence users in making project land management decisions.
- Manage designated Wilderness to maintain an enduring wilderness resource while providing for public access and uses consistent with the Wilderness Act of 1964 and the Alaska National Interest Lands Conservation Act of 1980 (ANILCA).

The Shoreline Outfitter/Guide analysis is designed to achieve Forest Plan goals and objectives and move the analysis area toward the desired conditions.

Purpose and Need 1

Land Use Designations (LUDs)

The Forest Plan uses Land Use Designations (LUDs) to guide management of the Tongass National Forest. Each LUD provides for a unique combination of activities, practices, and uses. The Shoreline Outfitter/Guide analysis area includes 16 LUDs (Figure 1-2). Goals, objectives, and desired future conditions of each LUD that apply to recreation and tourism are summarized in Appendix E and are described in detail in the Forest Plan. The amount of the analysis area in each LUD and in other ownership is also displayed in Appendix E.

Forest Plan Standards and Guidelines

Standards and guidelines for the management of the recreation resource are specified to achieve the objectives and goals of the LUD (Forest Plan, Chapter 3). There are also standards and guidelines that apply across the national forest and all LUDs (Forest Plan, Chapter 4). The standards and guidelines that apply to the Shoreline Outfitter/Guide Analysis are summarized in Chapter 2 of this document under Items Common To All Action Alternatives.

Public Involvement

Public involvement is a key component of the planning process. The Council on Environmental Quality (CEQ) defines scoping as:

...an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action. The scoping process is used to invite public participation, identify public issues, and obtain public comment at various stages of the environmental analysis process. Although scoping is to begin early, the process continues until a decision is made.

The following paragraphs describe the public involvement process for the Shoreline Outfitter/Guide Analysis.

Public Scoping

Public scoping was the key process used to identify issues in this analysis. We used an extensive public scoping process because of the importance of the analysis to both guided and unguided recreationists. Carrying capacity use allocations had not previously been determined at this scale on the Tongass National Forest and we wanted full public participation. Scoping began in October 1998 and continued through the summer of 2001. The analysis has been open to public input throughout the planning process.

Many methods were used to notify the public and request input for the analysis, including: public meetings, presentations to organizations, personal communications, scoping documents, newsletters, and radio news stories. Key features of this process are described below.

The Notice of Availability of the Draft EIS was published in the Federal Register on August 9, 2002, and through public Notices in the Juneau Empire, the designated newspaper of record. The publication of the first Public Notice initiated a 90-day

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public comment period. During the first month of this comment period it was discovered that the mailing list used for the mailing of the Draft Shoreline EIS document. As a result, a correction to the Notice of Availability was published in the Federal Register on October, 16, 2002 that explained that the public comment period was extended an additional 90 days to provide the same time for response to those who were inadvertently left off the initial mailing list.

Besides mailing the draft EIS to interested parties, EIS documents were also mailed to federal and state agencies, federally recognized tribal governments, and municipal offices. One hundred and fifty comments were received during the comment period. The comments received addressed:

- the level of commercial recreation use to be allowed,
- impacts to existing uses,
- conflicts between different commercial users,
- designating areas for large group use, and
- implementation of the Forest Plan standards and guidelines.

These comments and others are identified in Appendix G. The comments were used to complete the analysis of the project area, and to help the Responsible Official reach a decision on the implementation of any of the proposed activities.

Schedule of Proposed Actions (SOPA)

The Tongass Schedule of Proposed Actions is published on a quarterly basis to inform the public of activities being considered across the Tongass National Forest. People are invited to request more information and be on the mailing list for each project. This schedule is mailed to anyone who requests it and is available at Forest Service offices. It can also be found on the Tongass National Forest Internet site www.fs.fed.us/r10/tongass. The Shoreline Outfitter/Guide analysis has been listed on the Schedule of Proposed Actions since the fall of 1996.

Notice of Intent (NOI)

A Notice of Intent (NOI) to prepare an environmental impact statement informs the public of the analysis at the national level. Publication of an NOI in the *Federal Register* is required under the National Environmental Policy Act. The original NOI was published in the *Federal Register* on January 18, 2000. A Revised NOI was published in the *Federal Register* on April 5, 2001 to inform the public of changes in the scope of the analysis and schedule.

Mailing List

A Shoreline Outfitter/Guide Analysis mailing list was established and maintained to provide interested citizens, groups, and agencies with information and documents. The list consists of approximately 490 individuals, groups, and government agencies that have expressed interest in this project. As people responded to various scoping documents or meetings, their names were added to the list. The mailing list for the EIS is provided in Chapter 4 of this document.

Forest Plan
Land Use Designations (LUDs).

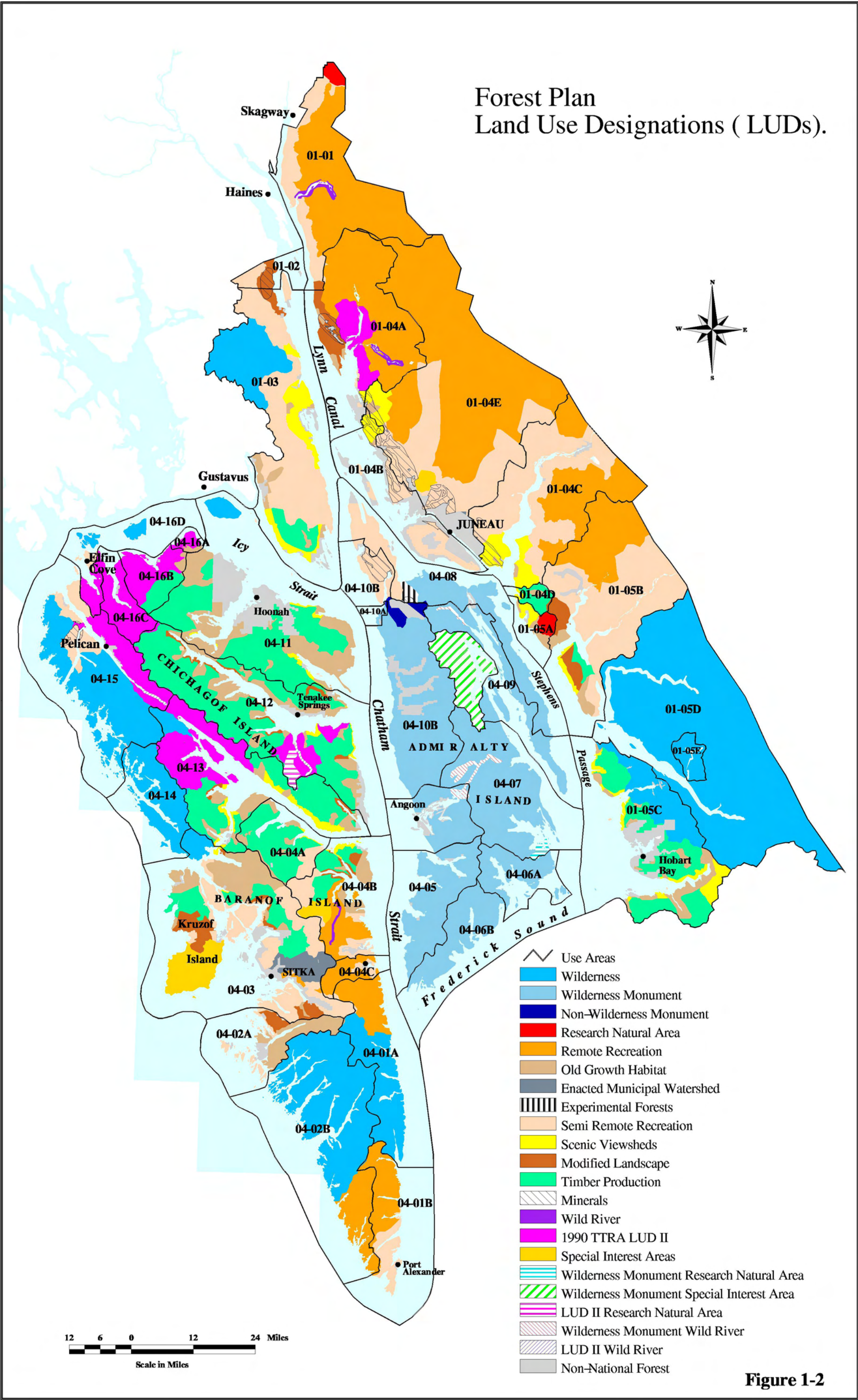


Figure 1-2

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Scoping Milestones

The Shoreline Outfitter/Guide Analysis started with an extensive series of public meetings, which generated interest in the communities and with special interest groups in the analysis area. The initial concerns expressed by big game guides included their perception of crowding while guiding bear hunting clients, and the potential to over-harvest bears. During 1998 and 1999, public meetings were held in Sitka, Juneau, Angoon, Tenakee Springs, Hoonah, Port Alexander, and Pelican (via teleconference). Meetings also were held with the Alaska Wilderness Recreation and Tourism Association (AWRTA) and the Sitka Conservation Society at their invitations. Additionally, the analysis was discussed in presentations to the Alaska Board of Game, Regional Federal Subsistence Board, and at the Common Ground workshop in Hoonah.

A scoping package was mailed to the public in October 1998 that provided background information, the purpose of and need for the project, the proposed action, and the draft 1998 Recreation Carrying Capacity analysis. The focus of the early scoping package was on providing a direct allocation to brown bear guided hunting activities.

After review of the letters received in response to the scoping package, the responsible official decided that the proposed action being considered in the Shoreline Outfitter/Guide Analysis might have significant effects on the human environment, calling for an EIS to be prepared rather than an environmental assessment (EA). As a result, the first Notice of Intent (NOI) to prepare an environmental impact statement was published on January 18, 2000 in the *Federal Register* (Vol. 5, No. 11 p. 2575).

A notice announcing the preparation of an EIS was mailed in February 2000 to people who had expressed interest in the project. An update on the project was sent out in June 2000.

Alaska Public Radio stations ran a series during 2000 and 2001 on the “Crowding of the Tongass” which included information on the Shoreline Outfitter/Guide Analysis.

The Forest Service broadened the focus of the project early in 2001 in response to letters from the public. The analysis area was expanded to include the Shoreline of Tracy Arm—Ford’s Terror Wilderness. The proposed action was revised and no longer provides a direct allocation to brown bear guided hunting activities. Brown bear guided hunting is now included within the overall commercial allocation. A Revised Notice of Intent reflecting the changes was published on April 5, 2001 in the *Federal Register* (Vol. 66, No. 66, pg 18072). The response letters were also used to develop issues.

Another analysis update was mailed to interested parties in April 2001 and explained the changes made in the analysis. It also identified the issues developed from the comments and provided preliminary alternative themes.

Additional meetings were held in communities within the analysis area throughout the spring and early summer of 2001, including Angoon, Kake, Hoonah, Port Alexander, Tenakee Springs, Sitka, Pelican, Elfin Cove, Gustavus, Haines, Klukwan, and Juneau. These meetings were announced through local newspapers, cable TV scanners, radio stations, and public bulletin boards. Issues and alternative themes

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were displayed and discussed at these meetings, as were maps showing Forest Plan direction, Use Areas, and 1999 commercial use.

After the publication of the Draft Shoreline EIS in the summer of 2002, a newsletter was mailed to the persons, organizations, and communities on the existing mailing list, which highlighted the components of the Draft Shoreline EIS. Also, public meetings were held in the fall in most communities within the project area. In other communities, meetings were held by use of teleconference (specifically, Tenakee Springs and Port Alexander).

Consultation with Federally Recognized Tribal Governments and Other Government Agencies

The Forest Service fosters collaborative stewardship by working closely with other government agencies and federally recognized tribal governments and entities. Collaboration may take the form of formal and informal consultations with tribes and agencies, as well as reviews by agencies with regulatory authority over activities considered in the Shoreline Outfitter/Guide EIS. Some commercial outfitter/guide activities authorized by this decision may require permits from other federal and state agencies.

Overview

The Forest Service coordinates the review of the analysis with several other agencies. The purpose of these reviews is to coordinate overlapping authorities and jurisdictions among agencies and to share information and expertise. In some cases, the reviews are required because another agency has authority to issue permits for specific proposed activities. In other cases, the reviews allow interaction with other agencies responsible for certain environmental conditions, such as clean water or healthy wildlife populations. This interagency cooperation helped identify ways to avoid or mitigate possible harmful environmental effects. In most cases, discussions continue with these agencies throughout the EIS process.

Many of the scoping responses we received were related to recreation use on the saltwater and tidelands. We have worked closely with the Alaska Department of Natural Resources (DNR), which manages these areas. DNR has completed the Northern Southeast Area Plan (NSEAP), for state lands within and adjacent to the Shoreline Outfitter/Guide analysis area. The NSEAP shares similar analysis area boundaries and timelines with the Shoreline Outfitter/ Guide analysis. We are coordinating the Shoreline Outfitter/Guide analysis with the DNR to enhance the compatibility of commercial use allocation and management, to the extent possible, with adjoining lands, tidelands, and waterways under state jurisdiction. The Forest Service and NSEAP team held joint public meetings in five communities so the public could comment on both projects at the same time.

This project was also discussed several times with the Interagency Recreation and Tourism Working Group, which include agency representatives from the U.S. Fish and Wildlife Service, Alaska Department of Fish and Game, Alaska Department of Commerce and Economic Development, Alaska Department of Natural Resources, and the Forest Service.

The Forest Service works at a government-to-government level with federally recognized tribes. The consultation process will continue throughout the stages of the analysis.

Tribal Governments

The Forest Service works at a government-to-government level with federally recognized tribes. Tribal governments include those groups recognized under the National Historic Preservation Act, the Native American Graves Protection Repatriation Act, and the Archaeological Resources Protection Act. In Alaska, for the purposes of heritage program consultation, Indian tribes as defined in the National Historic Preservation Act's implementing regulations (36 CFR 800.16(m)) include tribal governments recognized under the Wheeler-Howard Act of 1934 (Indian Reorganization Act [IRA]) as well as village and regional corporations created by the Alaska Native Claims Settlement Act. The initial contact for this analysis occurred with a letter sent to each tribal government with a brief project summary. The consultation process will continue throughout the stages of the analysis.

Follow-up consultations were made with the following tribal governments and Native Corporations:

Angoon Community Association	Central Council of Tlingit &
Chilkat Indian Village	Haida Indian Tribes
Chilkoot Indian Association	Goldbelt, Incorporated
Douglas Indian Association	Huna Totem, Incorporated
Hoonah Indian Association	Kake Tribal Corporation, Incorporated
Organized Village of Kake	Klukwan, Incorporated
Petersburg Indian Association	Kootznoowoo, Incorporated
Sitka Tribe of Alaska	Shee Atika, Incorporated
Skagway Village	Sealaska Corporation

During the consultations, we received valuable information on subsistence uses, important cultural areas and issues, and traditional lifestyles and values. Both guided recreation opportunities and concerns were provided. These were included in the analysis. Generally, the Tribal governments recognize the need for an outfitter/guide management plan. They wish to participate in the commercial recreation industry while ensuring that it occurs in an ecologically sustainable manner, which protects their cultural heritage and lifestyle. The consultations will continue into the future as part of the project monitoring.

State Agencies

Alaska Department of Environmental Conservation

Until spring of 2003, the Alaska Division of Governmental Coordination coordinated state responses relative to the Coastal Zone Management Act (CZMA). This function is now the responsibility of the Department of Environmental Conservation. Federal lands are not included in the definition of the coastal zone as prescribed in the CZMA. However, when federal agencies conduct activities or development affecting the coastal zone, CZMA requires that they be consistent to the maximum

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extent practicable with the approved State Coastal Management Program. The Forest Service makes the determination of consistency with the Alaska Coastal Management Program (ACMP)(see Chapter 3). The Forest Service's consistency determination is reviewed in a process coordinated through the Alaska Division of Governmental Coordination (ADGC).

The current Memorandum of Understanding between the State of Alaska and the Forest Service Regional Forester outlines standards against which the consistency evaluation will be made. The following standards are included in the agreement:

- Alaska Statute Title 46, Water, Air, Energy, and Environmental Conservation,
- Alaska Forest Practices Act of 1993,
- District Coastal Management Program, and
- Forest Plan standards and guidelines and the mitigation measures described in Chapters 2, 3, and Appendix C of this document (these are comparable to or exceed state standards).

The Alaska Coastal Management Program also contains standards and criteria for a determination of consistency for activities within the coastal zone. It provides for the development of local District Coastal Management Plans. The standards and criteria are primarily for activities that involve construction or water use. The Shoreline Outfitter/Guide analysis relates to section 6 AAC 80.060 RECREATION. “(B) Districts and state agencies shall give high priority to maintaining and when appropriate, increasing public access to coastal water.” Some commercial recreation activities may require outfitters and guides to apply for permits from the applicable state agencies through the ACMP process.

Alaska Department of Natural Resources

The Department of Natural Resources (DNR) is the land management agency for state uplands, tidelands, and submerged lands. DNR is also responsible for authorization for occupancy and use of state tidelands and submerged lands.

The Northern Southeast Area Plan (NSEAP), and the Central/Southern Southeast Area Plan (CSEAP) have now been completed by the DNR. The NSEAP and CSEAP will serve as the land management plan for state lands adjacent to the national forest in the Shoreline Outfitter/Guide analysis area. Certain activities involving occupancy and use of tidelands and submerged lands may require outfitter/guides to be authorized by the Alaska DNR.

Alaska Department of Environmental Conservation (DEC)

The Department of Environmental Conservation regulates water and air quality.

Alaska Department of Fish and Game (ADF&G)

The Department of Fish and Game manages fish and game resources and provides input on habitat management and the management of federal subsistence fish and game populations.

Alaska Board of Game

The Board of Game develops game management regulations and policy.

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Alaska Board of Fish

The Board of Fish develops fish management regulations and policy.

Alaska Department of Commerce and Economic Development (DCED)

The Department of Commerce and Economic Development is involved in economic, community development issues, and state commerce.

Alaska Division of Community Development – Alaska Office of Tourism

The Office of Tourism provides information and planning on state tourism.

Alaska Division of Occupational Licensing

The Division of Occupational Licensing provides state business licenses. It also regulates big game guides and provides state guide permits.

Alaska State Historic Preservation Officer

Manages state inventory of cultural properties.

Other Federal Agencies

U.S. Environmental Protection Agency

The Environmental Protection Agency provides review and comment.

U.S. Army Corps of Engineers

The Army Corps of Engineers has oversight of navigable waters and wetlands.

U.S. Coast Guard

The Coast Guard provides law enforcement and safety on the saltwater. It manages marine licensing and certifications.

National Marine Fisheries Service

The National Marine Fisheries Service (NMFS) has oversight and jurisdiction over marine mammals and marine threatened and endangered species.

U.S. Fish and Wildlife Service

The Fish and Wildlife Service (USFWS) has oversight and jurisdiction over eagles and other threatened and endangered species.

Federal and State Permits, Licenses, and Certifications

Some commercial outfitter/guide activities authorized by this decision may require permits from other federal and state agencies.

Issues

Significant issues are used to develop and compare alternatives, prescribe mitigation measures, and analyze the environmental effects.

An issue is defined as a point of discussion, debate or dispute about the environmental effects of the proposed action. Some issues are considered ‘significant’ because of the extent of their geographic distribution, the duration of their effects, or the intensity of interest or resource conflict. Significant issues are used to develop and compare alternatives, prescribe mitigation measures, and analyze the environmental effects. For an issue to be considered significant at the project level, it must be relevant to the specific project and appropriately addressed at that level. Significant issues for the Shoreline Outfitter/Guide analysis were identified by: the public during scoping, current agency issues, and comments from other government agencies. Similar issues were combined where appropriate.

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The IDT used an issue-sorting process to analyze comments received during scoping. The process is intended to ensure that all significant issues are identified and that all relevant issues are appropriately addressed in the analysis. Each comment received during scoping was considered a potential issue and was evaluated to determine whether the related issue was addressed through alternative design, addressed through implementation of project-specific mitigation measures, or beyond the scope of the project.

Factors that are quantifiable, linked to cause-and-effect relationships, and responsive to the issue are the ones that are used to compare the environmental effects among alternatives. Some other concerns can be mitigated the same way in all alternatives and are described in Chapter 2 under Items Common to all Action Alternatives. These concerns are also discussed under Other Environmental Considerations in Chapter 3.

Significant Issues

The following three significant issues emerged from the scoping efforts. Each issue is displayed to stand alone. However, there is some overlap in components and measures between the issues, to encompass the different perspectives of individual recreationists and the recreation industry.

Issue 1 focuses on the people who recreate on the national forest.

Issue 1. Availability of Recreation Opportunities for the Guided and Unguided Recreationist

Issue 1 focuses on the people who recreate on the national forest. Both guided and unguided recreationists often pursue the same type of recreation experience. The issue reflects the need for a variety of quality recreation opportunities for both guided and unguided recreationists on the national forest. It revolves around social interactions and recreation experience expectations and the effects on those interactions and expectations from the management of commercial uses as described in the alternatives.

Many people commented that the existing or increasing level of commercial use is causing crowding or displacement of local residents and independent travelers who recreate on the national forest. As commercial recreation has grown, many local residents are feeling displaced or crowded in some of their local areas and in certain remote areas where they expect primitive experiences. Some commented that they are being ‘over-run’ in their own backyards, traditional subsistence areas, and favorite places. Many people, especially in the smaller communities, expressed concern that they would not be able to maintain their lifestyle and access to forest resources in the future with continued tourism growth.

Some comments pointed out that many people, especially non-residents, do not have the skills, knowledge, or equipment to access the Tongass National Forest yet still desire to visit and recreate on the national forest. Commercial outfitters and guides were said to provide an essential service by assisting these people.

Some comments specifically identified local resource impacts by guided recreationists. Others felt that commercial use has fewer resource impacts on a per-person basis than unguided use because commercial use occurs under administrative oversight that encourages minimum impact on the land.

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Subsistence users expressed concern that commercial outfitter/guide activities are displacing them and decreasing access to traditional hunting, fishing, and gathering areas. Subsistence users were interested in maintaining their access to resources and to protect the quality of their experience.

Some expressed a desire for ‘commercial free zones.’ Other people requested ‘local commercial zones’ to allow local control in decisions affecting tourism’s role in areas near communities as they affect the local economy. Several comments listed specific areas and locations they would like to see set aside, including traditional subsistence areas and Coastal Zone Management Plan special places.

Most respondents felt that the quality of the recreation experience needs to be maintained and that commercial use needs to be controlled.

There are concerns that some types of recreation activities are displacing other activities, both guided and unguided.

Units of Measure for Issue 1

Each alternative will be evaluated on the variety and quality of recreation opportunities for guided and unguided recreationists. Measures for this issue include both qualitative and quantitative values. Many of the measurements generated are directly proportional to the amount and season of recreation carrying capacity allocated to commercial use. To respond to this issue, each alternative will be compared against:

- allocation available in number of group days to outfitted or guided recreationists,
- allocation available in number of group days to unguided recreationists,
- estimated number of people per year who could use commercial services to access the national forest in the analysis area (assumes average commercial group size of six),
- commercial allocation for spring (opportunities for solitude),
- commercial allocation for summer (opportunities for solitude),
- commercial allocation for fall (opportunities for solitude),
- potential commercial use level for Wilderness (opportunities for solitude),
- number of Enclaves allowing large group use,
- approximate area (acres) of Enclaves,
- number of Fifteen-Percent areas allowing large group use,
- approximate are (acres) of Fifteen-Percent areas, and
- limits on commercial use in Use Areas with communities.

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Issue 2 focuses on the recreation industry rather than on individual recreationists.

Issue 2. Economic Opportunities and Potential Effects on Outfitter/Guide Businesses

Issue 2 focuses on the recreation industry rather than on individual recreationists. It responds to recreation industry concerns about economic opportunities and the influence of outfitter/guide management on their businesses.

The recreation industry expressed concerns about the opportunity for their businesses to continue to grow and diversify. Recreation businesses understand that their economic viability is contingent upon their being able to provide a quality recreation experience.

Commercial recreation and tourism are increasing in importance in the economy of Southeast Alaska. While most comments support some limits on commercial use, many respondents were concerned about the economic impacts of restrictions and limits on commercial use. Comments reflected the great diversity of the commercial recreation industry; competition exists among different segments of the commercial outfitter/guide industry, and decisions about the allocation of commercial uses will affect these segments differently.

Concerns about the economic future of the recreation industry revolve around business stability and sustainability, and around reducing uncertainty. The ability to obtain long-term permits (up to 5 years) was said to enhance certainty and stability of commercial recreation businesses.

The number of registered big game guides has increased substantially over the past decade in the analysis area, which has raised concerns that the level of guided hunting may not be sustainable because of declining experiences and game population concerns. Existing big game guides expressed concern that their businesses remain large enough to be economically viable; they want to maintain their current or historical use levels and limit new entrants into the business. Other existing commercial providers also expressed interest in limiting commercial use.

Still others are concerned that there will be no opportunity to start a new business in recreation and that only existing outfitter/guides will have permits.

Some newer tour outfitter/guides expressed concern that the proposed action would limit opportunities for growth. There are concerns that smaller companies would be unable to compete for business in the analysis area.

Some tour boat outfitter/guides providing services to large groups felt they have been progressively excluded from areas of the national forest over the past two decades. They expressed the need for more areas on the national forest where larger groups can recreate.

Units of Measure for Issue 2

The effects on outfitter/guide economic opportunities will be evaluated for each alternative. Measures for this issue include both qualitative and quantitative values. Many of the measurements generated are directly proportional to the amount and season of recreation carrying capacity allocated to commercial use. The units of measure include:

- allocation available in number of group days to outfitted or guided recreationists,
- percent of recreation capacity allocated to commercial use,
- group days available for industry growth above current average use levels (approximately 2,500 groups during 1999-2001),
- number of Use Areas by seasons approaching, at, or over allocated capacity,
- number of Enclaves allowing large group use,
- number of Fifteen percent areas allowing large group use, and
- contribution to business stability and certainty by establishing predictable use levels and allowing for multi-year special use permits.

Conflicts among the different commercial recreation businesses are the focus of Issue 3.

Issue 3. Conflicts Within the Commercial Recreation Industry

There is a broad diversity in the types and size of businesses involved in commercial recreation. Some of these differences can lead to conflicts among the different commercial recreation businesses. These conflicts are the focus of Issue 3, which also deals with social interactions and expectations for recreation experiences.

Different commercial recreation businesses often want to provide a certain type of recreation experience. Conflicts can arise when incompatible activities occur in close proximity. Comments highlighted conflicts between commercial outfitter/guide operations due to the types of activities, number of clients, group size, and boat sizes. Some outfitter/guides also expressed interest in limiting the total number of commercial outfitter/guides who would be using the shoreline in order to maintain the existing recreation experience.

Some businesses disagreed over various methods of access that were perceived to adversely affect the recreation experience. Helicopter and wheeled airplane access was seen as incompatible with some boat or foot travel access. Large commercial outfitter/guide operations that are increasing in number and size were said to displace smaller commercial operations. Several comments mentioned that often the activities of smaller operations tend to be similar and compatible, minimizing conflicts, while larger operations are often engaged in activities that detract from the setting and expectations of smaller groups. Some outfitter/guides believe they are being displaced from their traditional areas of use by larger commercial operations. Some comments requested that areas be specifically designated as small group or large group areas. Concerns were expressed that because of their size, larger groups more directly degrade forest resources and social settings than smaller groups.

Some outfitter/guides said that they want to expand their business into the spring and fall 'shoulder seasons'. Others pointed out that such expansion would encroach on big game hunting guides who can operate only during limited hunting seasons, generally spring and fall. Big game guides also noted that they need solitude to have successful hunts, and they felt that allowing other types of commercial outfitter/guide uses during hunting seasons could decrease hunting opportunities, cause loss of historical use, and decrease customer satisfaction. The concern seemed to focus on crowding as the key element in allowing additional outfitter/guides on the shoreline during hunting seasons; some big game outfitter/guides noted a decline in client satisfaction of their hunting experience due to crowding and encounters.

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On the other hand, rough rocky coastlines, with relatively few safe anchorages, limit the number of locations from which larger tour boats can provide their clients with access to the national forest. Some tour boat outfitter/guides said they are feeling crowded out of areas that were once available for their group use.

Some commercial outfitter/guides involved in non-hunting activities, such as fly-fishing, hiking, nature study, or wildlife viewing, also expressed concerns about crowding and the need to provide their clients with a pristine setting and experience. Some expressed the opinion that hunting is not compatible with wildlife viewing.

Units of Measure for Issue 3

Each alternative will be assessed as to its potential to reduce conflicts among the different outfitter/guides. Measures include both qualitative and quantitative values. Many of the measurements generated are directly proportional to the amount and season of recreation carrying capacity allocated to commercial use. The measures include:

- establishes recreation management seasons,
- limits commercial allocations in the spring season,
- limits commercial allocations in the fall season,
- designates Enclaves and Fifteen-Percent Areas for large group use, and
- specifies maximum size of large groups.

Other Environmental Considerations

In addition to the significant issues described above, the public raised many other concerns during the scoping period. Although these concerns may be addressed to varying degrees in the analysis, they were not considered significant issues, as defined by the National Environmental Policy Act (NEPA), and they did not drive the development of alternatives to the proposed action. Others are not related to the decision, or their resolution is outside the scope of this analysis. Many potential resource effects would have the same mitigation in all alternatives or are controlled through adherence to Forest Plan standards and guidelines.

Resource Concerns Discussed in Chapter 3

Concerns were expressed about the following resources, which are addressed in Chapter 3 under Other Environmental Considerations:

- Biodiversity
- Soils
- Wetlands
- Vegetation
- Wildlife
- Fish Habitat and Water Quality
- Threatened and Endangered Species
- Karst and Cave Resources
- Subsistence
- Heritage Resources
- Air Quality

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Issues Beyond The Scope Of This EIS

The following comments received during scoping are not specific to this analysis or relate to decisions at a higher level of planning.

Issues of Jurisdiction

Many comments reflected issues of jurisdiction. The Forest Service only has jurisdiction over permitting the level and type of commercial activities on National Forest System lands. The Alaska Department of Fish and Game (ADFG) and the Federal Subsistence Board (FSB) have jurisdiction over managing, controlling, and regulating wildlife and fish populations on National Forest System lands. The Alaska Department of Commerce and Economic Development, Division of Occupational Licensing, and Big-Game Commercial Services Board have jurisdiction over registering big game guides.

Combine the State of Alaska DNR Northern Southeast Area Plan and the Shoreline Outfitter/Guide Analysis into one EIS.

The National Environmental Policy Act encourages combining federal projects under one environmental analysis and document when it would eliminate duplication of effort. However, the State of Alaska and the USDA Forest Service manage their lands and conduct their planning processes under different jurisdictional authorities and methods. The Forest Service is working closely with the State of Alaska Department of Natural Resources to ensure that the management of the national forest and the adjacent state lands and waters are compatible to the maximum extent practicable.

The Forest Service should manage saltwater use whether it is under state or federal jurisdiction.

Many public comments were about recreation and other uses on the saltwater rather than on the national forest. Perceptions of crowding are occurring primarily on the saltwater, which provides most of the access to the national forest in the analysis area. The national forest generally extends from mean high tide landward and has open access to the public in all but a very few areas. The Forest Service does not have jurisdiction over saltwater or submerged tidelands. The State of Alaska filed quiet title to submerged lands underlying marine waters within the boundaries of the Tongass National Forest. Though the United States claimed ownership of the submerged lands, the Supreme Court ruled in favor of the State. As a result of this litigation, the State of Alaska is responsible for management of lands below mean-high tide.

Address commercial use of the waterways and all upland use.

Several comments stated the analysis should include all commercial use activities on all lands and waterways rather than limiting the scope of the analysis to shoreline-based activities on the national forest. The Forest Service does not have authority to manage other land ownerships or state waterways, although the Forest Service does confer with these owners. National forest beyond the shoreline zone was not included in the analysis because very little commercial use occurs in that area.

There should be no corporate commercial use of the national forest.

Some people requested that no preference be given to large corporations for outfitter/guide permits on the national forest. No Forest Service policy currently

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exists that provides a preference toward an outfitter/guide business based on the incorporation or size of the business. Whether such a preference should exist is a matter of national policy and is outside the scope of this analysis.

Permit only local residents as outfitters and guides.

A number of residents wanted to sustain their communities and support local employment by restricting outfitter/guide permits to local residents. Section 1307 of the Alaska National Interest Lands Conservation Act (ANILCA) provides for a local preference for outfitter/guides providing visitor services, (except for sport fishing and hunting guiding activities), within conservation system units. During the preparation of the Final Shoreline EIS, a final rule for providing this preference to residents and Native Corporations was published in the Federal Register on July 11, 2003. This preference is discussed in more detail in Chapter 3.

Ensure monitoring and enforcement.

Several people commented that without effective monitoring of use and enforcement of laws related to commercial activities, the entire capacity analysis and allocation is meaningless. A monitoring plan is included in Appendix D. A monitoring and implementation plan will be included in the Record of Decision.

Applicable Laws and Executive Orders

Below is a partial list of federal laws and executive orders pertaining to the analysis. While most pertain to all federal lands, some of the laws are specific to Alaska. Disclosures and discussions of findings required by these laws and orders are contained in Chapter 3 of this EIS.

- Organic Act of 1897—instructs the Secretary of Agriculture to preserve and regulate occupancy and use of the national forest.
- Bald and Golden Eagle Protection Act, 1940 (as amended)
- Multiple-Use Sustained-Yield Act of 1960—clarifies the purposes for which national forests were established, which include outdoor recreation, range, timber, watershed, wildlife, and fish.
- Wilderness Act of 1964—established the National Wilderness Preservation System, consisting of federal lands designated among other purposes, to preserve their “primeval character and influence.”
- Land and Water Conservation Fund Act of 1964—“assists in preserving, developing, and assuring accessibility to all citizens of the United States of America...such quality and quantity of outdoor recreation resources as may be available and are necessary and desirable...by providing funds for federal acquisition of certain lands and other areas.” This act also provides for collection of recreation use fees for recreation sites, facilities, equipment, or services.
- National Historic Preservation Act of 1966 (as amended)
- National Trails System Act of 1968—established a national system of recreation, scenic and historic trails “in order to provide for the ever-increasing outdoor recreation needs of an expanding population.”

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- Wild and Scenic Rivers Act of 1968, amended 1986—established a system to preserve rivers with “outstandingly remarkable” scenic, recreational, geological, fish and wildlife, historical, cultural, or other similar values.
- National Environmental Policy Act (NEPA) of 1969 (as amended).
- Clean Air Act of 1970 (as amended).
- Alaska Native Claims Settlement Act (ANCSA) of 1971
- The Alaska Coastal Management Act of 1977
- Marine Mammal Protection Act of 1972
- Endangered Species Act (ESA) of 1973 (as amended)
- Forest and Rangeland Renewable Resources Planning Act (RPA) of 1974 (as amended)—directs the Secretary of Agriculture to periodically assess the forest and rangeland resources of the nation, and to submit to Congress, at regular intervals, recommendations for long-range Forest Service programs essential to meet future resource needs.
- Migratory Bird Treaty Act of 1918
- National Forest Management Act (NFMA) of 1976 (as amended)—established a forest planning process, with regulations stating that forest plans will provide “for the safe use and enjoyment of the forest resources by the public.”
- Clean Water Act of 1977 (as amended)
- Coastal Zone Management Act (CZMA) of 1972 (as amended)
- American Indian Religious Freedom Act of 1978
- Archeological Resources Protection Act of 1979
- Alaska National Interest Lands Conservation Act (ANILCA) of 1980—includes a variety of provisions with direct or indirect implications for recreation management on national forests such as access, traditional activities in wilderness, and taking of fish and wildlife.
- Cave Resource Protection Act of 1988
- Tongass Timber Reform Act (TTRA) of 1990
- Native American Graves Protection and Repatriation Act of 1990
- Magnuson-Stevens Fishery Conservation and Management Act of 1996
- Executive Order 11593 (cultural resources)
- Executive Order 11988 (floodplains)
- Executive Order 11990 (wetlands)
- Executive Order 12898 (environmental justice)
- Executive Order 12962 (aquatic systems and recreational fisheries)
- Executive Order 13007 (American Indian sacred sites)
- Executive Order 13084 (consultation and coordination with tribal governments)
- Executive Order 13175 (consultation and coordination with tribal governments)
- Executive Order 13186 (migratory bird protection)

1 Purpose and Need

Availability of Final EIS

The Notice of Availability of this EIS will be published in the *Federal Register* and as a legal notice in *The Juneau Empire*, the newspaper of record for decisions to be signed by the Tongass Forest Supervisor or Deputy Forest Supervisor. Publication in the *Federal Register* initiates the 45 day appeal filing period.

EIS documents will also be mailed to federal and state agencies, federally recognized tribal governments, municipal governments, Southeast Alaska libraries, and anyone else who requested them. Recipients of the Final EIS are listed in Chapter 4. The Final EIS is also available at the Admiralty National Monument; Hoonah, Petersburg, Sitka, and Juneau Ranger District offices; and the Forest Supervisor's Offices in Sitka, Petersburg, and Ketchikan. Comments received during the Draft EIS review period were evaluated and included in the analysis. The EIS was modified to respond to these comments.

Chapter 2

Alternatives

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Chapter 2

Key Terms

Carrying capacity (recreation) — The estimated maximum number of groups of people who could recreate in an area and still have a specified type of recreation experience.

Commercial use — Any use of the national forest for which a fee is charged by an outfitter/guide.

Enclave — Area where large groups can occur on a regular basis throughout the season.

Fifteen-Percent Area — Places where large groups can occur only on an occasional basis, for less than 15 percent of the primary use season.

Group — A group consists of one or more individuals recreating together as a social unit. Groups are used as the basic unit in this analysis

Group days — A measurement of recreation use by groups using the national forest on a daily basis

Large group — Group made up of a number of people that exceeds the general maximum group size for a specified type of recreation experience in the ROS. Large group size varies by LUD and ROS. For large group areas in this EIS, large groups are defined as 21-75 people.

Mitigation — Measures designed to counteract or reduce environmental impacts.

Recreation Opportunity Spectrum (ROS) — A system for planning and managing recreation that categorizes recreation opportunities into seven classes.

Shoreline zone — The analysis area extending inland approximately one-half mile from mean high tide.

Use Area — Distinct geographic areas used in the analysis as the basis for defining and managing recreation use.

Chapter 2

Alternatives

Introduction

Alternative Development Process

Chapter 2 summarizes the development of alternatives that meet the Purpose and Need and respond to the significant issues described in Chapter 1. The proposed action, alternatives to the proposed action, and the no-action alternative are described. A comparison of the alternatives is presented at the end of the chapter using information summarized from Chapter 3, Affected Environment and Environmental Consequences.

The original proposed action was based on the draft *1998 Chatham Area Salt-water Shoreline-Based Recreation Carrying Capacity Analysis* (USDA Forest Service 1998) and developed after a series of public and interagency meetings beginning in 1995. The proposed action and the draft recreation carrying capacity analysis were sent to interested parties for public comment in October 1998 (see Chapter 1).

The 1998 proposed action and scope of the analysis were both modified in response to the public comments and additional analysis. The following items were changed:

- expanding the analysis area to include the Tracy Arm–Fords Terror Wilderness,
- subdividing some Use Areas to facilitate a more site-specific analysis of management concerns,
- developing uniform recreation seasons for all Use Areas to facilitate the analysis of the various recreation uses,
- changing the title of the analysis to “Shoreline Outfitter/Guide Environmental Impact Statement” to better reflect the scope of the analysis (The word “saltwater” in the original title was removed because it led to confusion and misconceptions that the analysis would determine use on saltwater. This analysis covers only commercial recreation uses occurring on the national forest uplands within the shoreline zone.),
- identifying locations and conditions where large size commercial groups may occur,
- broadening the proposed action to include all commercial recreation providers, including big game hunters, in the overall commercial recreation allocation (Where commercial uses are limited, allocations to specific outfitter/guide uses would be accomplished through the Special Uses administrative processes.),
- development of the concept of Large Group Areas, both Enclaves and 15% Areas, to provide for large group use in accordance with Forest Plan standards and guidelines,
- amending the Forest Plan was no longer needed (All activities in the analysis would fully comply with Forest Plan direction), and
- considering the use of helicopters and wheeled planes in site-specific locations.

2 Alternatives

The draft 1998 recreation carrying capacity analysis was updated to respond to public comment and reflect the current situation. It is documented in the *Shoreline-Based Recreation Carrying Capacity for the Admiralty Island National Monument, Hoonah, Juneau, and Sitka Ranger Districts, 2001* (USDA Forest Service 2001), which is referred to as the recreation carrying capacity analysis or the *Shoreline RCC* in this document.

After receiving comments to the Shoreline Outfitter/Guide Draft Environmental Impact Statement (DEIS), and upon further evaluation, additional items were incorporated into the Final EIS. These items include:

- defining the concept of “group day” as a tool for measuring and managing recreation use on National Forest System lands in the analysis area (see Chapter 2, page 3),
- eliminating eight (8) enclaves and ten (10) Fifteen-percent areas from all alternatives because of either resource or management concerns (see Appendix B for the specific larger group areas were dropped), and
- reconsideration of the Williams Cove area for use as an enclave and as a substitute for the No Name Cove enclave within Use Area 01-05B (Use by large groups has been authorized within Williams Cove for several years and it would be inconsistent not to evaluate this for continued use. The final decision for the FEIS will likely decide which one of these two sites to authorize for continued use).

Alternative Components

Information used to develop alternatives included issues that surfaced during the scoping process, Forest Plan direction, the Recreation Opportunity Spectrum (ROS), the recreation carrying capacity analysis, and resource reports. The proposed action and each alternative to the proposed action provide different responses to significant issues. Each action alternative is designed to meet the purpose and need and the desired future conditions for the analysis area. The action alternatives emphasize a different mix of allocations, settings, and seasons of use to reduce potential recreation conflicts. The range of alternatives addresses the diversity of recreation and tourism concerns.

Each action alternative represents a specific proposal developed through interdisciplinary evaluation to allocate the number of group days by season and describe mitigation measures and conditions for commercial use in each Use Area.

Carrying Capacity

Recreation carrying capacity is defined as the number of groups of people in an area who would be able to enjoy a specified recreation experience. The total amount of recreation carrying capacity available in the analysis area was determined in the recreation carrying capacity analysis (Shoreline RCC, 1998). That analysis defined Use Areas and determined recreation carrying capacity for each of them in group-days, based on the Recreation Opportunity Spectrum (ROS) and Forest Plan. The recreation carrying capacity analysis was used to develop the proposed action in this

document. A more detailed discussion of the recreation carrying capacity analysis is presented in Appendix F.

Community Use

The amount of commercial use allocation varies by alternative and Use Area. In Use Areas with communities, commercial allocations were reduced in some alternatives.

Group Day

As a result of comments to the Draft Shoreline Outfitter/Guide Environmental Impact Statement (DEIS), changes were incorporated into the analysis. It was necessary to use a range of group sizes in the analysis, to account for differences in how people recreate on the landscape, and to better describe potential impacts of their use. To manage social experiences as anticipated by the recreation carrying capacity, the concept of “group day” was developed as a management tool.

Group days, as they are used in this document, conform to the group sizes described in the Forest Plan standards and guidelines for maintaining an expected recreation experience within each designated LUD and ROS. In general, groups of 1-12 people, regardless of how they split into party sizes on shore, would count as one group. Any group with 13-20 people would count as two group days. Any group of 21-40 people would count as three group days. Groups of 41-75 people would count as four group days. For the purpose of this analysis, groups no larger than 75 people are considered.

Large Group Size

Concerns about the size of some commercial groups led to the development of a pool of areas where large group use (21 to 75 people) would be considered acceptable. The concept of Large Group Areas was designed to accommodate Remote Setting Nature Tour activities in a limited number of areas, while preserving the experience of remoteness and solitude for other recreationists, both commercial and non-commercial. The specific size of a ‘large group’ that may be authorized varies depending on the Land Use Designation (LUD) and maximum party size allowed under ROS guidelines (see Appendix F).

Two types of large group areas were developed:

‘*Enclaves*’ are areas within the Semi-Remote Recreation LUD, where large groups can occur on a regular basis throughout all seasons; and

‘*Fifteen-Percent Areas*’ are places where large groups can occur only on an occasional basis for less than 15 percent of the primary use, or summer season. This type of use can occur in Semi-Remote Recreation, Old Growth Habitat and LUD II land use designations.

Through additional analysis and public comment, the large group area pool was reduced. Each alternative proposes different numbers of Enclaves and Fifteen-Percent areas. Large group size cannot exceed 75 persons unless authorized following additional analysis.

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At an enclave or fifteen-percent area a large group, regardless of size, will be counted as one group day for the purpose of determining the amount of use within the allocated capacity for a specific Use Area.

Seasons

Three distinct recreation seasons are identified to provide a management tool to address the different types of recreation that occur in the different seasons. (See Chapter 3, page 9) The seasons also provide more flexibility in making allocations across the year. Allocations for commercial recreation use were not developed for the winter season because outfitter/guide use is very low during this season. Commercial use allocations vary between the seasons in the alternatives.

Access

Different methods of mechanized transportation used to access the national forest were evaluated. Motorized boats, floatplanes, kayaks, wheeled-planes, helicopters, and Off-Highway Vehicles (OHVs) were considered for each Use Area. Wheeled plane access is allowed at varying levels among the alternatives. (See Chapter 2, page 48, Alternatives and Proposals Considered But Eliminated Detailed Study for additional discussion regarding OHVs and helicopter use.)

Mitigation

Many concerns identified during scoping can be eliminated or reduced through mitigation. Mitigation measures to reduce resource effects apply to all the action alternatives, while those that reduce social effects or conflicts vary by alternative.

Monitoring

Specific monitoring requirements developed by resource specialists, or suggested by the public and other agencies are included in Appendix D. Monitoring requirements apply to all action alternatives. The Forest Plan requires both Program and Project level monitoring.

Items Common to All Action Alternatives

The Forest Plan provides many measures to mitigate or prevent negative impacts to the environment in the planning and implementation of land management activities. All applicable Forest Plan LUD standards and guidelines have been incorporated along with applicable Forest Service manual and handbook direction. The analysis also developed several recreation management strategies that apply to all the action alternatives. The following are some of the key items that apply to all the action alternatives.

Recreation

The following apply to all the action alternatives:

- The types of commercial recreation activities proposed are primarily dispersed and remote wildland activities that include, but are not limited to: sightseeing, hiking, biking, back-country camping, nature viewing, photography, kayaking, hunting, fishing, and similar activities that do not necessitate any ground disturbance.
- The Recreation Opportunity Spectrum (ROS) and the Forest Plan are used to define recreation expectations for a quality experience.
- Commercial recreation allocations are based on the capacity developed in the recreation carrying capacity analysis.
- Commercial recreation activities will meet all applicable laws, regulations, and management direction.
- Use Areas provide specific geographic recreation management areas.
- Methods of access included in all the alternatives are boats, kayaks, and floatplanes. Motorized boat restrictions apply to all action alternatives to protect resources and public safety.
- Regulation of non-commercial use will not occur as a result of this decision.

Fish and Game Management

The State of Alaska and the Federal Subsistence Board manage fish and game populations to ensure healthy viable populations. Outfitter/guide activities involving the taking of fish or game would be authorized under the regulations and harvest limits established by the Alaska Board of Game, Board of Fisheries and the Federal Subsistence Board. Alaska Board of Game harvest recommendations for guided big game hunting, including brown bear, apply to all alternatives. If fish or game harvest levels begin to approach harvest limits, Outfitter guides will be required to modify their operations in accordance with State and Federal regulation. The Federal Subsistence Board is responsible for managing the taking fish and game on all Federal public land in Alaska, and could restrict recreational or commercial activities to protect subsistence resources for eligible Alaskan residents (see discussion on the Subsistence resource in Chapter 3). In the event that hunting or fishing resources remain restricted for a prolonged period, the Forest Service may use a competitive process to allocate outfitter guide capacity.

Mitigation Measures

Mitigation measures applied to all alternatives to limit resource impacts are listed in Appendix C. Site-specific mitigation measures for each Use Area are also displayed in Appendix A and for each large group area in Appendix B.

Riparian Management Areas

Riparian Management Areas are of special concern for fish, water quality, and wildlife values. These areas are delineated and protected under the Forest Plan riparian standards and guidelines.

Fish Habitat and Water Quality

Forest Plan standards and guidelines for riparian areas are applied to all streams within the Shoreline Outfitter/Guide analysis area to protect fish habitat and water quality. Best Management Practices (BMPs) would be applied to minimize the risk of land management activities impairing water quality. Use Area narratives describe streams that require specific protection measures during implementation (Appendix A). Protection measures are specified to protect soil and water quality.

2 Alternatives

Eagle and Raptor Nests

The Forest Service and the U.S. Fish and Wildlife Service have a Memorandum of Understanding that establishes a habitat management zone with a 330-foot radius around each bald eagle nest tree. Guided groups are prohibited from camping in this zone. Outfitter/guide activities will avoid disturbing known eagle, goshawk, and other raptor nesting sites during active nesting and rearing seasons.

Threatened, Endangered, and Sensitive Listed Species

Biological assessments have been completed for threatened or endangered species potentially inhabiting the analysis area. Applicable Forest Plan standards and guidelines for each sensitive species are incorporated to ensure that any listed species or its habitat would not be adversely affected. The responsible agencies have been consulted.

Marine Mammals

The National Marine Fisheries Service (NMFS) requires all boats to stay at least 100 yards away from humpback whales. NMFS has also established 3,000-foot air, sea, and land critical habitat zones around several Steller sea lion haul-outs in Southeast Alaska. The recommended viewing distance for all other marine mammals is 100 yards. Additional standards and guidelines for marine mammals are found in the Forest Plan, as well as in the National Marine Fisheries Service Alaska Region Viewing Guidelines, and in Appendix C.

Heritage Resources

Heritage sites will be protected through avoidance, mitigation, and regulatory enforcement and monitoring. Two sites offer opportunities for site interpretation and stewardship and are discussed in Chapter 3. The Alaska State Historic Preservation Officer concurs with the determination of “no effect” on heritage resources as a result of authorizing outfitter guide activities outlined in this EIS.

Alternatives Considered in Detail

Alternative 1 (no action), and Alternatives 2 (proposed action), 3, 4, and 5 are considered in detail. The proposed action represents the initial proposal to meet the purpose and need. The other action alternatives represent different ways of satisfying the purpose and need by applying different strategies to address significant issues discussed in Chapter 1. Tables 2-1, 2-2, 2-3, 2-6, and 2-9 display commercial allocations by Use Area and season for each alternative.

Alternative 1 – No Action

Council on Environmental Quality (CEQ) regulations requires a ‘no-action’ alternative be analyzed in every EIS. The no-action alternative for this EIS, Alternative 1, represents the existing condition of recreation management in the analysis area. Alternative 1 would continue the present management practices of the outfitter/guide Special Uses program. It would not provide a specific allocation of the recreation carrying capacity to commercial use and it would not preclude commercial use. The details of this alternative are listed below and displayed in Table 2-1. Figure 1-1 in Chapter 1 shows the location of each Use Area.

- No specific allocation for commercial recreation carrying capacity currently exists. Commercial use would be equal to the actual use authorized annually on a case-by-case basis, which could be up to half of the appropriate recreation carrying capacity. The authorized officer (in this case, the District Ranger) who signs the special use permit determines appropriate carrying capacity. By specific location, there would be consideration of various allocations based on

Alternatives **2**

historical use, changing demand, spatial zoning, or temporal zoning (Forest Plan, 1997; pages 4-41).

- Outfitters and guides would apply for permit renewal, but no new or additional priority use permits would be issued without additional environmental analysis. Existing multi-year priority use authorizations would continue for the remaining permitted time period. At that point, they would be considered for reissuance on an annual basis only, pending additional environmental analysis.
- A separate competitive process would address the existing moratoriums limiting commercial use. These include the bear guide moratorium and site-specific commercial use stipulations on the Hoonah, Sitka, and Juneau Ranger Districts and Admiralty National Monument.
- Commercial use would not be managed on a seasonal basis.
- No large group areas would be designated for active management.

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Table 2-1. Alternative 1 (No Action)—Commercial Allocation by Use Area and Season

Use Area	General Location	Commercial Allocation (Group-Days)			Total
		Spring	Summer	Fall	
01-01	Skagway Area	**	**	**	**
01-02	Haines Area	**	**	**	**
01-03	East Chilkats	**	**	**	**
01-04A	Berners Bay	**	**	**	**
01-04B	N. Juneau Coast	**	**	**	**
01-04C	Taku Inlet	**	**	**	**
01-04D	Slocum Inlet	**	**	**	**
01-05A	Taku Harbor	**	**	**	**
01-05B	Port Snettisham	**	**	**	**
01-05C	Windham Bay	**	**	**	**
01-05D	Tracy Arm	**	**	**	**
01-05E	Fords Terror	**	**	**	**
04-01A	Gut Bay, Baranof	**	**	**	**
04-01B	Port Armstrong	**	**	**	**
04-02A	Redoubt Lake	**	**	**	**
04-02B	Whale Bay	**	**	**	**
04-03	Sitka Area	**	**	**	**
04-04A	Lake Eva, Rodman Bay	**	**	**	**
04-04B	Kelp Bay	**	**	**	**
04-04C	Baranof Warm Springs	**	**	**	**
04-05	SW Admiralty	**	**	**	**
04-06A	Pybus Bay	**	**	**	**
04-06B	Eliza Harbor	**	**	**	**
04-07	Gambier Bay	**	**	**	**
04-08	NE Admiralty	**	**	**	**
04-09	Seymour Canal	**	**	**	**
04-10A	Greens Creek	**	**	**	**
04-10B	NW Admiralty	**	**	**	**
04-11	Hoonah Area	**	**	**	**
04-12	Tenakee Inlet	**	**	**	**
04-13	Peril Strait	**	**	**	**
04-14	Slocum Arm	**	**	**	**
04-15	West Chichagof	**	**	**	**
04-16A	Point Adolphus	**	**	**	**
04-16B	Mud Bay	**	**	**	**
04-16C	Idaho Inlet	**	**	**	**
04-16D	Port Althorp	**	**	**	**
Total		**	**	**	**

** No specific allocation is made. Commercial use is allowed on a case-by-case basis from current levels of 2,446 up to 40,638 (50 percent of the recreation carrying capacity).

Alternative 2 – (Proposed Action)

Alternative 2 is the proposed action. It provides a specific commercial use allocation for each Use Area and season, with a moderate level of commercial use. The details of this alternative are listed below and displayed in Table 2-2. Figure 1-1 in Chapter 1 shows the location of each Use Area.

- Up to 16,175 commercial groups would be able to use the analysis area through the spring, summer, and fall seasons.
- Approximately 21 percent of the total recreation carrying capacity would be allocated to commercial use for the analysis area as a whole through all seasons. Individual Use Area allocations range between approximately 10 and 40 percent of the total recreation carrying capacity.
- Emphasis is on limiting commercial use during the spring and fall seasons to reduce encounters and provide more opportunities for solitude. Spring and fall commercial allocations would be about 10 percent of the total carrying capacity.
- Allocations in Use Areas with communities are generally reduced and range between 10 and 30 percent of the carrying capacity.
- No large group areas would be designated for active management.
- This alternative would not authorize wheeled airplane access.
- Commercial use on the Mud Bay River would be prohibited.
- Site-specific descriptions, resource considerations, and mitigation measures for each Use Area are provided in Appendices A and C.

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Table 2-2. Alternative 2—Commercial Allocation by Use Area and Season

Use Area	General Location	Commercial Allocation (Group-Days)			Total
		Spring	Summer	Fall	
01-01	Skagway Area	42	424	47	513
01-02	Haines Area	21	212	24	257
01-03	East Chilkats	84	848	94	1,026
01-04A	Berners Bay	42	106	47	195
01-04B	N. Juneau Coast	25	64	28	117
01-04C	Taku Inlet	50	127	56	233
01-04D	Slocum Inlet	42	106	47	195
01-05A	Taku Harbor	25	254	28	307
01-05B	Port Snettisham	84	848	94	1,026
01-05C	Windham Bay	109	1,102	122	1,333
01-05D	Tracy Arm	50	509	56	615
01-05E	Fords Terror	13	127	14	154
04-01A	Gut Bay, Baranof	34	339	38	411
04-01B	Port Armstrong	29	297	33	359
04-02A	Redoubt Lake	25	254	28	307
04-02B	Whale Bay	76	763	85	924
04-03	Sitka Area	168	424	188	780
04-04A	Lake Eva, Rodman Bay	34	339	38	411
04-04B	Kelp Bay	38	382	42	462
04-04C	Baranof Warm Springs	13	127	14	154
04-05	SW Admiralty	25	191	28	244
04-06A	Pybus Bay	13	127	14	154
04-06B	Eliza Harbor	13	127	14	154
04-07	Gambier Bay	25	254	28	307
04-08	NE Admiralty	118	594	132	844
04-09	Seymour Canal	42	318	47	407
04-10A	Greens Creek	17	170	19	206
04-10B	NW Admiralty	29	297	33	359
04-11	Hoonah Area	59	223	66	348
04-12	Tenakee Inlet	63	557	71	691
04-13	Peril Strait	67	509	75	651
04-14	Slocum Arm	34	297	38	369
04-15	West Chichagof	84	636	94	814
04-16A	Point Adolphus	25	159	28	212
04-16B	Mud Bay	25	159	28	212
04-16C	Idaho Inlet	25	159	28	212
04-16D	Port Althorp	25	159	28	212
Total		1,693	12,588	1,894	16,175

Alternative 3

Alternative 3 provides a specific commercial use allocation for each Use Area and season. It was developed to evaluate the highest allocation level allowed in the Forest Plan. Specific Use Area allocations would allow for the most growth in the recreation industry. In general, there is less emphasis on providing opportunities for solitude and more on increasing visitor access to the national forest. There are fewer restrictions to commercial use; restrictions are primarily for essential resource protection. The details of this alternative are listed below and displayed in Table 2-3. Figure 1-1 in Chapter 1 shows the location of each Use Area.

- Up to 39,297 commercial groups would be able to use the analysis area through the spring, summer, and fall seasons.
- Approximately 50 percent of the total recreation carrying capacity would be allocated to commercial use through all three seasons.
- Spring and fall season commercial allocations would be 50 percent of the carrying capacity.
- Commercial allocations in Use Areas containing communities would be up to 50 percent of the carrying capacity.
- Thirty-three (33) Enclaves would be designated for large group use (Figure 2-1 and Figure 2-2 and Table 2-4).
- Large group use in Enclave areas would be allowed in all seasons. Group size in these areas would be limited to a maximum of 75 people and only one large group would be able to use an area at a time.
- Thirteen (13) Fifteen-Percent areas would be designated for large group use (Figure 2-1 and Figure 2-2 and Table 2-5).
- Large group use could occur in Fifteen-Percent areas only in the summer season. Group size in these areas would be limited to a maximum of 75 people, and only one large group would be able to use an area at a time.
- Wheeled airplane use would be allowed in Neka Bay (in Use Area 04-11) and Mud Bay (in Use Area 04-16B) a maximum of three times per week during summer and fall seasons when requested by outfitter/guides to accommodate a person with a disability.
- Site-specific descriptions, resource considerations, and mitigation measures for each Use Area are provided in Appendices A and C.
- Site-specific descriptions, resource considerations, and mitigation measures for each large group area are provided in Appendices B and C.

2 Alternatives

Table 2-3. Alternative 3—Commercial Allocation by Use Area and Season

Use Area	General Location	Commercial Allocation (Group Days)			Total
		Spring	Summer	Fall	
01-01	Skagway Area	210	530	235	975
01-02	Haines Area	105	265	118	488
01-03	East Chilkats	420	1,060	470	1,950
01-04A	Berners Bay	210	530	235	975
01-04B	N. Juneau Coast	126	318	141	585
01-04C	Taku Inlet	252	636	282	1,170
01-04D	Slocum Inlet	210	530	235	975
01-05A	Taku Harbor	126	318	141	585
01-05B	Port Snettisham	420	1,060	470	1,950
01-05C	Windham Bay	546	1,378	611	2,535
01-05D	Tracy Arm	252	636	282	1,170
01-05E	Fords Terror	63	159	71	293
04-01A	Gut Bay, Baranof	168	424	188	780
04-01B	Port Armstrong	147	371	165	683
04-02A	Redoubt Lake	126	318	141	585
04-02B	Whale Bay	378	954	423	1,755
04-03	Sitka Area	840	2,120	940	3,900
04-04A	Lake Eva, Rodman Bay	168	424	188	780
04-04B	Kelp Bay	189	477	212	878
04-04C	Baranof Warm Springs	63	159	71	293
04-05	SW Admiralty	126	318	141	585
04-06A	Pybus Bay	63	159	71	293
04-06B	Eliza Harbor	63	159	71	293
04-07	Gambier Bay	126	318	141	585
04-08	NE Admiralty	588	1,484	658	2,730
04-09	Seymour Canal	210	530	235	975
04-10A	Greens Creek	84	212	94	390
04-10B	NW Admiralty	147	371	165	683
04-11	Hoonah Area	294	742	329	1,365
04-12	Tenakee Inlet	315	795	353	1,463
04-13	Peril Strait	336	848	376	1,560
04-14	Slocum Arm	168	424	188	780
04-15	West Chichagof	420	1,060	470	1,950
04-16A	Point Adolphus	126	318	141	585
04-16B	Mud Bay	126	318	141	585
04-16C	Idaho Inlet	126	318	141	585
04-16D	Port Althorp	126	318	141	585
Total		8,463	21,359	9,475	39,297

Table 2-4. Alternative 3—Enclave Large Group Areas

Use Area	Enclave Area
01-01	Katzehin Falls
01-02	Sullivan Mountain
01-03	Cant Cove
01-03	Howard Bay
01-04C	Sunny Cove
01-05B	Mallard Cove
01-05B	No Name Cove/Williams Cove
01-05B	Point Anmer
01-05B	West Gilbert Bay
01-05C	Fanshaw
01-05C	North Windham Bay
01-05C	Port Houghton
01-05C	Sand Bay
04-03	Dry Pass
04-03	Eagle River Road
04-03	Noxon
04-04A	Lake Eva Trail
04-04A	Point Elizabeth
04-04A	Rodman Bay
04-04A	Saook Bay
04-04B	Hanus Bay
04-04B	Portage Arm
04-08	Cordwood Creek
04-08	Fowler Creek
04-11	Eight Fathom Dock
04-11	Kennel Creek
04-11	Red Cliff Islands
04-11	Salt Lake Bay Dock
04-12	Corner Bay Road
04-13	Sitkoh Bay Road
04-15	Bohemia Basin
04-15	Three Hill Island
04-16D	George Island

2 Alternatives

Table 2-5. Alternative 3—Fifteen-Percent Large Group Areas

Use Area	Fifteen-Percent Area
01-05B	Point Coke
04-03	Fish Bay
04-03	Nadezhida Islands
04-04A	Duffield
04-04B	Bourbon Creek Road
04-11	Iyoukeen Peninsula
04-11	Neka Bay – South Bight
04-11	Neka Bay – North Bight
04-13	Nismeni Point
04-16A	Damp Marker
04-16A	Pinta Cove
04-16C	Big Shaw Island
04-16C	Fox Creek

Alternative 3
Shoreline Outfitter/Guide FEIS
Large Group Areas
(Chichagof & Baranof Islands)

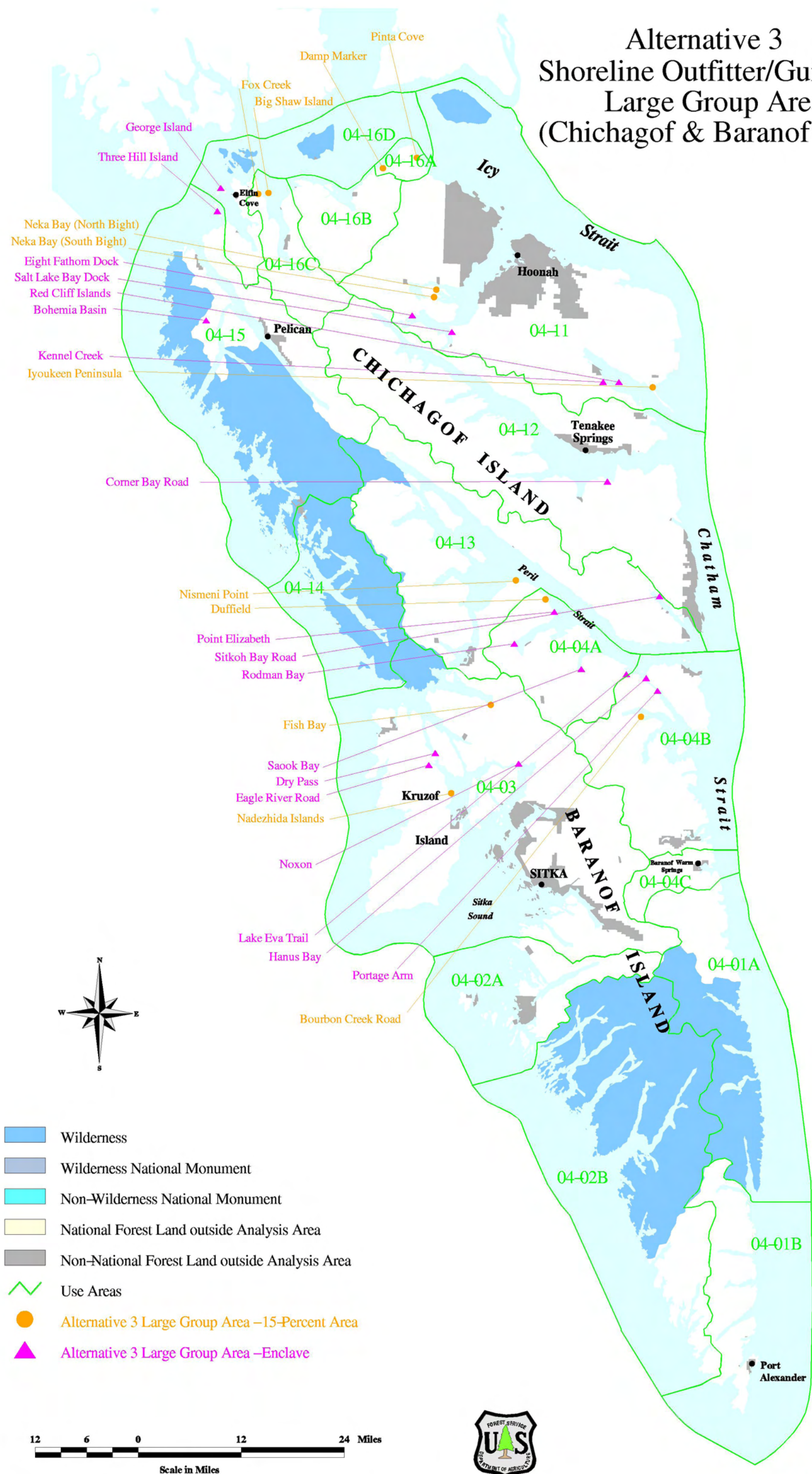


Figure 2-1

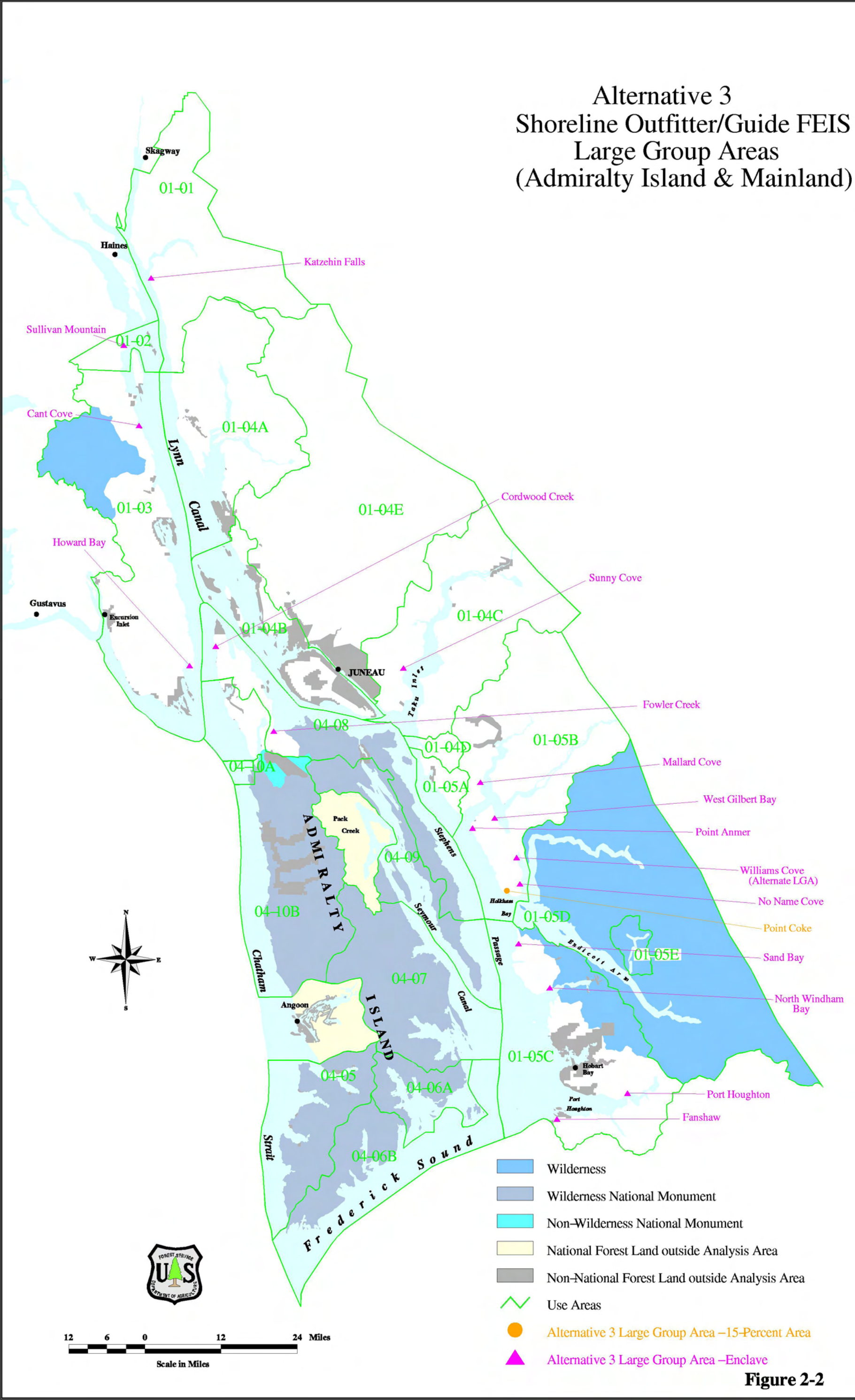


Figure 2-2

Alternative 4

Alternative 4 provides specific commercial use allocations for each Use Area and season. It provides the lowest commercial allocation. Overall, there is an emphasis on providing more opportunities for recreation experiences with solitude. This alternative is the most restrictive on commercial uses to reduce social conflicts. Details of this alternative are listed below and displayed in Table 2-6. Figure 1-1 in Chapter 1 shows the location of each Use Area.

- Up to 6,059 commercial groups would be able to use the analysis area through the spring, summer, and fall seasons.
- Approximately 8 percent of the total recreation carrying capacity would be allocated to commercial use for the analysis area as a whole through all seasons. Commercial allocations for each Use Area range between 5 and 25 percent of the total carrying capacity.
- This alternative emphasizes lower limits on commercial use levels than the proposed action to reduce encounters and provide more opportunities for solitude during both the spring and fall seasons. The spring commercial allocation would be up to 15 percent of the carrying capacity and the fall commercial allocation would be up to 25 percent in some areas.
- Commercial allocations in Use Areas containing communities would be less than 15 percent of the carrying capacity.
- Twelve (12) Enclaves would be designated for large group use (Figures 2-3 and 2-4 and Table 2-7).
- Large group use in Enclave areas would be allowed in the spring, summer, and fall seasons. Group size in these areas would be limited to a maximum of 75 people, and only one large group would be able to use an area at a time.
- Three (3) Fifteen-Percent areas would be designated for large group use (Figures 2-3 and 2-4 and Table 2-8).
- Large group use in Fifteen-Percent areas could only occur in the summer season. Group size in these areas would be limited to a maximum of 75 people, and only one large group would be able to use an area at a time.
- Wheeled airplane use would be allowed in Neka Bay (in Use Area 04-11) and Mud Bay (in Use Area 04-16B) a maximum of three times per week during summer and fall seasons when requested by outfitter/guides to accommodate a person with a disability.
- Site-specific descriptions, resource considerations, and mitigation measures for each Use Area are provided in Appendices A and C.
- Site-specific descriptions, resource considerations, and mitigation measures for each large group area are provided in Appendices B and C.

2 Alternatives

Table 2-6. Alternative 4—Commercial Allocation by Use Area and Season

Use Area	General Location	Commercial Allocation (Group Days)			Total
		Spring	Summer	Fall	
01-01	Skagway Area	21	53	24	98
01-02	Haines Area	15	30	15	60
01-03	East Chilkats	42	106	47	195
01-04A	Berners Bay	21	53	24	98
01-04B	N. Juneau Coast	15	32	15	62
01-04C	Taku Inlet	25	64	28	117
01-04D	Slocum Inlet	21	70	24	115
01-05A	Taku Harbor	15	32	15	62
01-05B	Port Snettisham	42	156	47	245
01-05C	Windham Bay	55	138	61	254
01-05D	Tracy Arm	25	64	33	122
01-05E	Fords Terror	15	33	15	63
04-01A	Gut Bay, Baranof	19	80	37	136
04-01B	Port Armstrong	27	68	16	111
04-02A	Redoubt Lake	15	32	15	62
04-02B	Whale Bay	38	193	42	273
04-03	Sitka Area	84	212	94	390
04-04A	Lake Eva, Rodman Bay	33	175	19	227
04-04B	Kelp Bay	29	191	25	245
04-04C	Baranof Warm Springs	15	30	15	60
04-05	SW Admiralty	38	111	71	220
04-06A	Pybus Bay	19	111	15	145
04-06B	Eliza Harbor	19	30	15	64
04-07	Gambier Bay	38	76	15	129
04-08	NE Admiralty	59	148	66	273
04-09	Seymour Canal	31	53	24	108
04-10A	Greens Creek	15	140	15	170
04-10B	NW Admiralty	44	37	29	110
04-11	Hoonah Area	70	158	33	261
04-12	Tenakee Inlet	37	80	35	152
04-13	Peril Strait	101	92	74	267
04-14	Slocum Arm	50	42	19	111
04-15	West Chichagof	42	199	47	288
04-16A	Point Adolphus	15	159	15	189
04-16B	Mud Bay	21	159	15	195
04-16C	Idaho Inlet	16	159	21	196
04-16D	Port Althorp	15	156	15	186
Total		1,202	3,722	1,135	6,059

Table 2-7. Alternative 4—Enclave Large Group Areas

Use Area	Enclave Area
01-04C	Sunny Cove
01-05B	Mallard Cove
01-05B	No Name Cove/Williams Cove
01-05B	West Gilbert Bay
01-05C	Port Houghton
01-05C	Sand Bay
04-04A	Lake Eva Trail
04-04A	Rodman Bay
04-12	Corner Bay Road
04-13	Sitkoh Bay Road
04-15	Three Hill Island
04-16D	George Island

Table 2-8. Alternative 4—Fifteen-Percent Large Group Areas

Use Area	Fifteen-Percent Area
04-16A	Damp Marker
04-16A	Pinta Cove
04-16C	Fox Creek

2 Alternatives



Alternative 4 Shoreline Outfitter/Guide FEIS Large Group Areas (Chichagof & Baranof Islands)

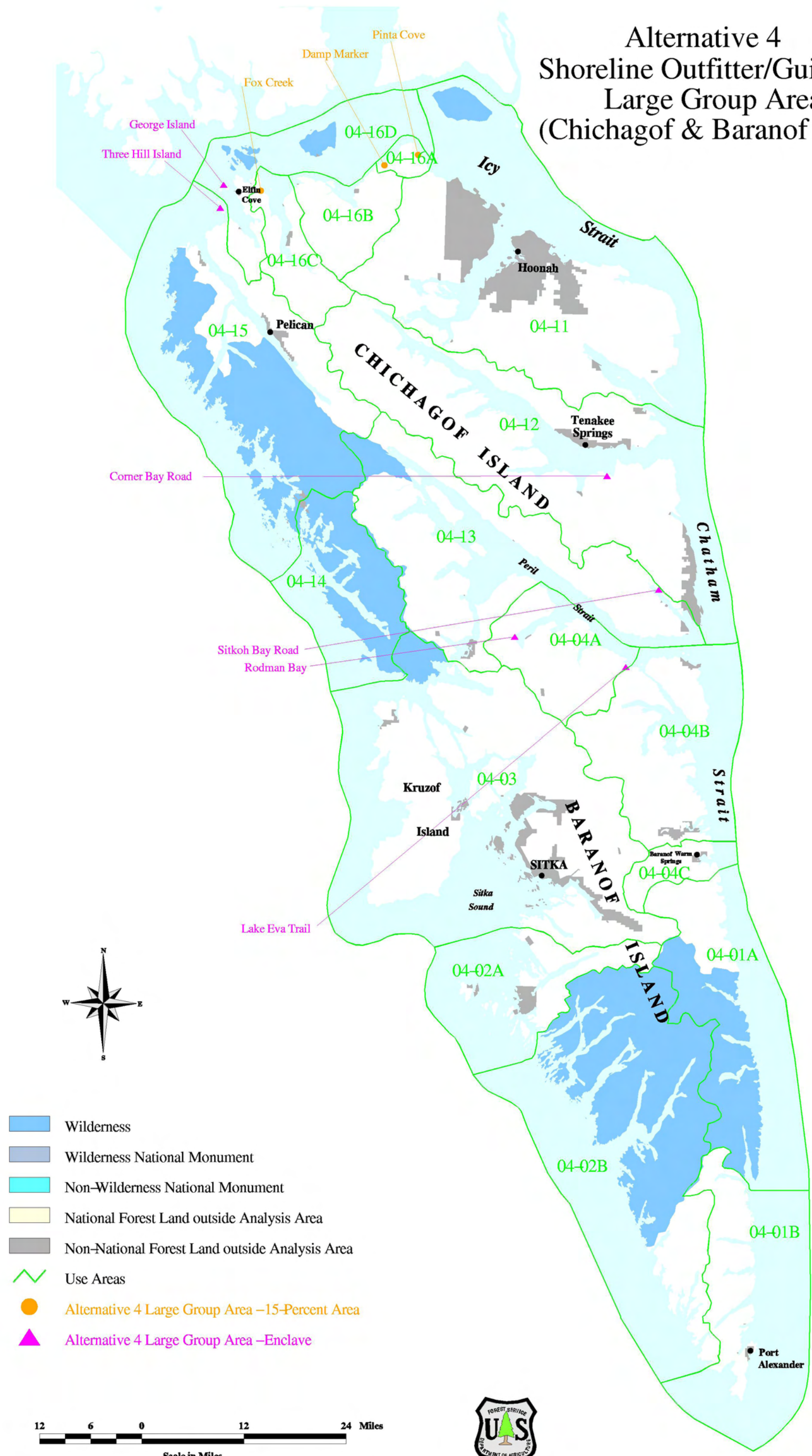


Figure 2-3

Alternative 4
Shoreline Outfitter/Guide FEIS
Large Group Areas
(Admiralty Island & Mainland)

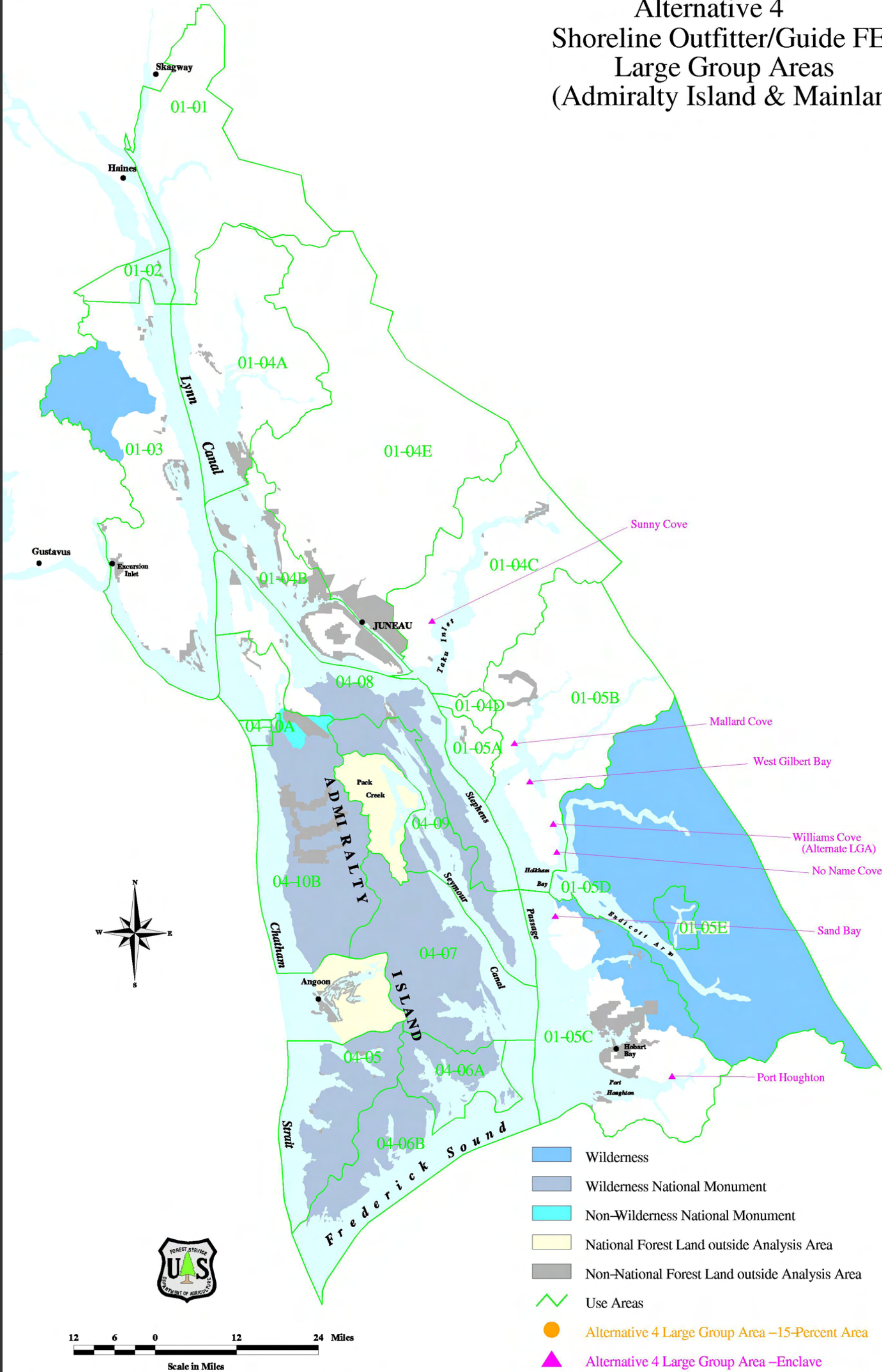


Figure 2-4

Alternative 5

Alternative 5 provides a specific commercial use allocation for each Use Area and season. It provides for a moderate level of commercial use. There are some restrictions to commercial use to reduce social conflicts. The details of this alternative are listed below and displayed in Table 2-9. Figure 1-1 in Chapter 1 shows the location of each Use Area.

- Up to 17,530 commercial groups would be able to use the analysis area through the spring, summer, and fall seasons.
- Approximately 23 percent of the total recreation carrying capacity would be allocated to commercial use for the analysis area as a whole through all three seasons. Commercial allocations in each Use Area range between about 10 and 40 percent of the carrying capacity. The allocation varies to achieve site-specific management objectives.
- Alternative 5 emphasizes limited commercial use during only the spring season to reduce encounters and provide more opportunities for solitude. Spring allocation would be about 10 percent of the total carrying capacity.
- Commercial allocations in Use Areas with communities are generally reduced and range from 10 to 40 percent of the total carrying capacity.
- This alternative would designate twenty-eight (28) Enclaves for large group use (Figures 2-5 and 2-6 and Table 2-10).
- Large group use in Enclave areas would be allowed in all three seasons. Group size in these areas would be limited to a maximum of 75 people, and only one large group would be able to use an area at a time.
- This alternative would designate eight (8) Fifteen-Percent areas for large group use (Figure 2-5 and Figure 2-6 and Table 2-11).
- Large group use could occur in Fifteen-Percent areas only in the summer season. Group size in these areas would be limited to a maximum of 75 people, and only one large group would be able to use an area at a time.
- Limited wheeled airplane landings would be allowed in Neka Bay (in Use Area 04-11) and Mud Bay (in Use Area 04-16B) under daily and/or weekly restrictions. Neka Bay landings would only be authorized to accommodate persons with disabilities.
- Site-specific descriptions, resource considerations, and mitigation measures for each Use Area are provided in Appendices A and C.
- Site-specific descriptions, resource considerations, and mitigation measures for each large group area are provided in Appendices B and C.

2 Alternatives

Table 2-9. Alternative 5—Commercial Allocation by Use Area and Season

Use Area	General Location	Commercial Allocation (Group-Days)			Total
		Spring	Summer	Fall	
01-01	Skagway Area	42	212	118	372
01-02	Haines Area	21	106	59	186
01-03	East Chilkats	84	424	235	743
01-04A	Berners Bay	42	106	118	266
01-04B	N. Juneau Coast	25	64	71	160
01-04C	Taku Inlet	50	127	141	318
01-04D	Slocum Inlet	42	106	118	266
01-05A	Taku Harbor	25	106	71	202
01-05B	Port Snettisham	84	424	235	743
01-05C	Windham Bay	109	551	306	966
01-05D	Tracy Arm	50	254	141	445
01-05E	Fords Terror	13	60	35	108
04-01A	Gut Bay, Baranof	34	339	94	467
04-01B	Port Armstrong	29	297	82	408
04-02A	Redoubt Lake	25	106	71	202
04-02B	Whale Bay	76	763	212	1,051
04-03	Sitka Area	470	1187	526	2,183
04-04A	Lake Eva, Rodman Bay	34	339	94	467
04-04B	Kelp Bay	38	382	106	526
04-04C	Baranof Warm Springs	13	127	35	175
04-05	SW Admiralty	25	127	71	223
04-06A	Pybus Bay	13	127	35	175
04-06B	Eliza Harbor	13	127	35	175
04-07	Gambier Bay	25	127	71	223
04-08	NE Admiralty	118	296	329	743
04-09	Seymour Canal	42	212	118	372
04-10A	Greens Creek	17	127	47	191
04-10B	NW Admiralty	29	149	82	260
04-11	Hoonah Area	59	371	165	595
04-12	Tenakee Inlet	63	557	176	796
04-13	Peril Strait	67	678	188	933
04-14	Slocum Arm	34	297	94	425
04-15	West Chichagof	84	636	235	955
04-16A	Point Adolphus	25	254	71	350
04-16B	Mud Bay	25	254	71	350
04-16C	Idaho Inlet	25	159	71	255
04-16D	Port Althorp	25	159	71	255
Total		1,995	10,737	4,798	17,530

Table 2-10. Alternative 5—Enclave Large Group Areas

Use Area	Enclave Area
01-01	Katzehin Falls
01-02	Sullivan Mountain
01-04C	Sunny Cove
01-05B	Mallard Cove
01-05B	No Name Cove/Williams Cove
01-05B	Point Anmer
01-05B	West Gilbert Way
01-05C	Fanshaw
01-05C	North Windham Bay
01-05C	Port Houghton
01-05C	Sand Bay
04-03	Eagle River Road
04-04A	Lake Eva Trail
04-04A	Point Elizabeth
04-04A	Rodman Bay
04-04A	Saook Bay
04-04B	Hanus Bay
04-08	Cordwood Creek
04-08	Fowler Creek
04-11	Eight-Fathom Dock
04-11	Kennel Creek
04-11	Red Cliff Islands
04-11	Salt Lake Bay Dock
04-12	Corner Bay Road
04-13	Sitkoh Bay Road
04-15	Bohemia Basin
04-15	Three Hill Island
04-16D	George Island

Table 2-11. Alternative 5—Fifteen-Percent Large Group Areas

Use Area	Fifteen-Percent Area
01-05B	Point Coke
04-11	Iyoukeen Peninsula
04-11	Neka Bay – South Bight
04-11	Neka Bay – North Bight
04-13	Nismeni Point
04-16A	Damp Marker
04-16A	Pinta Cove
04-16C	Fox Creek

2 Alternatives



Alternative 5 Shoreline Outfitter/Guide FEIS Large Group Areas (Chichagof & Baranof Islands)

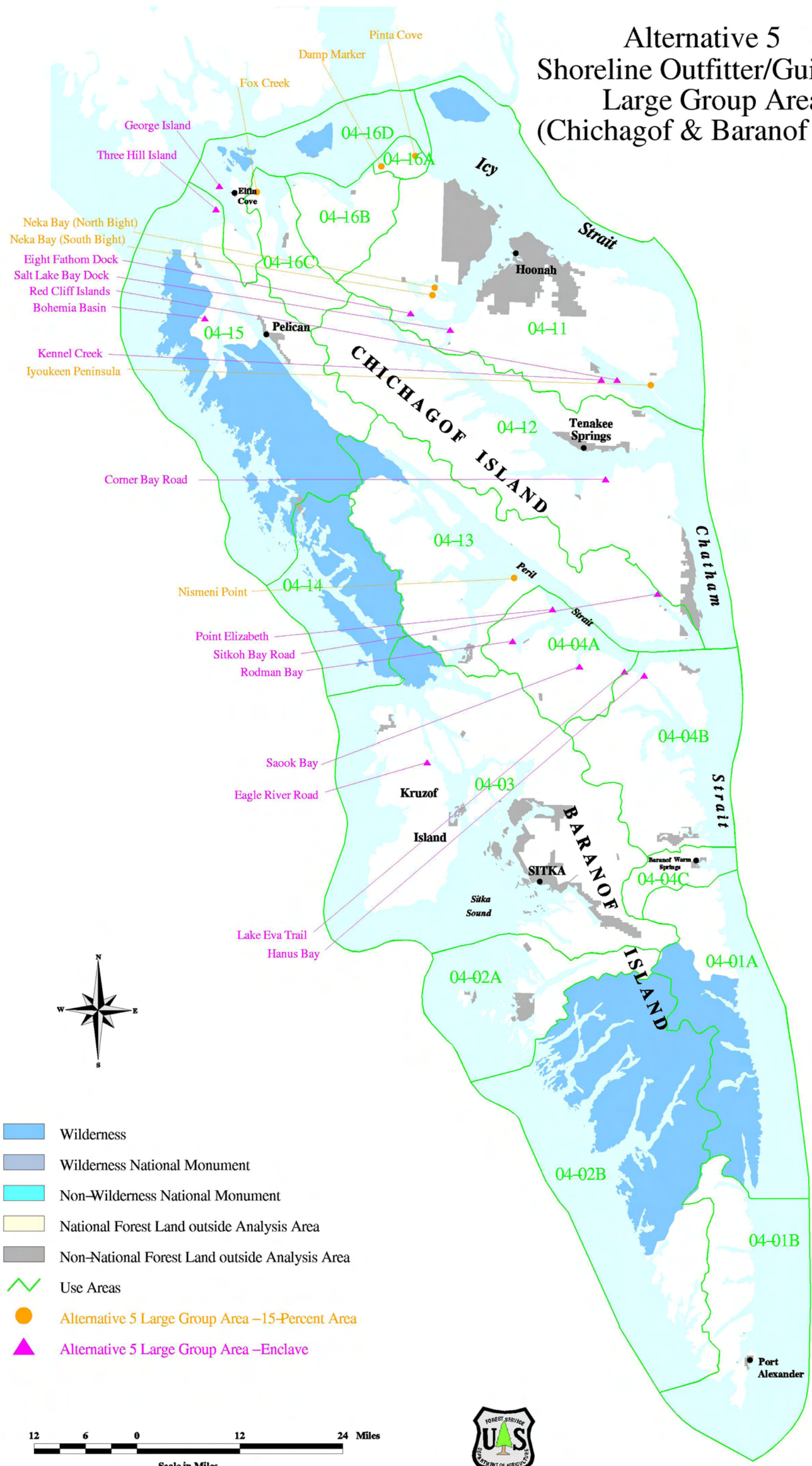


Figure 2-5

Alternative 5
Shoreline Outfitter/Guide FEIS
Large Group Areas
(Admiralty Island & Mainland)

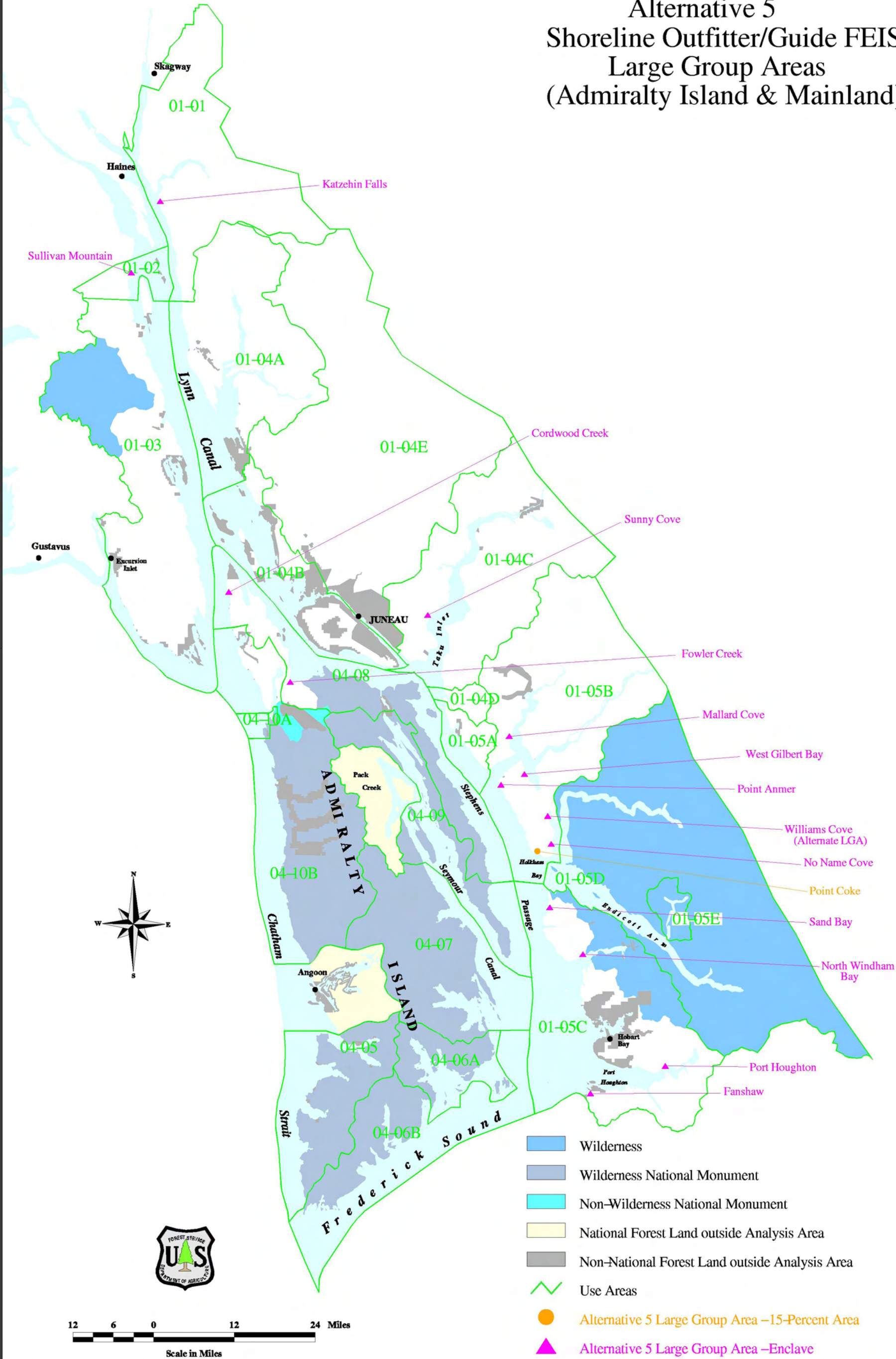


Figure 2-6

Comparison of Alternatives Summary

This section provides a summary of the differences among the alternatives and how they respond to significant issues (see Chapter 1). The differences are summarized in Tables 2-12 through 2-14. More detailed comparison of the effects of the alternatives is presented in Chapter 3.

General differences among the alternatives are shown in Table 2-12.

General Comparison

Table 2-12. Comparison of Alternatives—General

Alternative	General Description	Average Total Recreation Carrying Capacity Allocated to Commercial Use for Spring, Summer and Fall Seasons
1 No Action	Existing conditions. Continues present management practices of the outfitter/guide Special Uses program.	No specific allocation. Commercial use allowed on a case-by-case basis. Up to 50%
2 Proposed Action	Emphasis on limiting commercial use during spring and fall, no large group areas, no commercial wheeled airplane access.	Moderate Approximately 21%
3	Less emphasis on providing opportunities for solitude, more emphasis on increasing visitor access and commercial opportunity, limits commercial wheeled airplane landings in Neka Bay and Mud Bay. 46 large group areas identified.	Highest Approximately 50%
4	Emphasis on providing more opportunities for solitude, limits commercial wheeled airplane landings in Neka Bay and Mud Bay. 15 large group areas identified.	Lowest Approximately 8%
5	Emphasis on limited commercial use during spring, some large group areas, limits commercial wheeled airplane landings in Neka Bay and Mud Bay. 36 large group areas identified.	Moderate Approximately 23%

Comparison by Issue

Issue 1: Availability of Recreation Opportunities for the Guided and Unguided Recreationists

This issue focuses on the individual guided and unguided recreation user. It incorporates both qualitative and quantitative measures including the types of recreation opportunities available, the recreation carrying capacity allocation to commercial use, the number of people able to access the national forest using guides, areas where larger groups can recreate, the concentration/dispersion of recreation use, opportunities for solitude, and the effects of commercial use on unguided recreationists.

2 Alternatives

Allocation available in number of group days to outfitted or guided recreationists

The total commercial allocation levels provide a measure of the amount of recreation use available to guided recreationists. The allocation levels also provide a measure of the potential for crowding. The action alternatives provide a range of total allocations and allocations by Use Area and season.

In general, the perception of crowding could correlate to the amount of carrying capacity used. The more use an area receives, by both guided and unguided recreationists, the greater the potential perception of crowding. However, it is important to emphasize that the potential effects of crowding recognized in this analysis may not be realized. While some growth in guided or outfitted use will be realized, future growth depends on many external factors such as the economy, improvements in access to communities, or how quickly commercial outfitter/guides work to provide services.

The highest total commercial allocation would be made under Alternative 3, which would provide 39,297 group days. Alternative 5 would provide 17,530 group days, followed closely by Alternative 2 with 16,175 group days. The lowest total allocation would be Alternative 4 with 6,059 group days. Alternative 1 makes no specific commercial allocation but continues to allow for commercial use. Current average commercial use (1999–2001) is approximately 2,500 group days. The total allocation in each of the action alternatives would exceed this level of guided recreation use. Alternative 1 could allow for additional growth, however the amount or rate would be dependent on additional analysis completed on a case-by-case basis, as time and funding would allow. See Chapter 3 for further discussion of recreation use rate of growth.

The large amount of available recreation carrying capacity in the analysis area will meet the demand for unguided recreation in all alternatives, considering projected increases in local resident populations and the anticipated number of independent travelers visiting the analysis area.

Allocation available in number of group days to unguided recreationists

No allocation or use limitations for unguided recreationists would be established by this decision. If, in the future, the total recreation use within a Use Area should approach its total carrying capacity, both guided and unguided use may need to be managed and would be evaluated in a separate analysis.

Effects to recreation sites vary by alternative. Use levels are different as is the establishment of areas where large groups may congregate. These effects are described in detail in Chapter 3. Impacts to recreation sites may also occur as a result of other planned management activities that are consistent with the Forest Plan and approved by other environmental documents (i.e. timber sales or transmission lines).

Higher allocations allow a greater number of people, increasing the potential for crowding. The effects from all of the alternatives would be within the range of those anticipated in the Forest Plan. The more primitive recreation experiences anticipated by the Forest Plan would be available in all alternatives. The alternatives provide

different ways to reduce the potential effects of commercial use on unguided recreationists. These include:

- reducing allocations in Use Areas containing communities,
- closing or restricting specific areas to commercial use,
- restricting large group use to specific areas,
- limiting commercial use in certain seasons, and
- imposing limitations and restrictions on commercial use to reduce social conflicts.

Alternative 4 would have the least potential, as an action alternative, to have effects on unguided recreationists for several reasons. It has the lowest potential for crowding because it has the lowest commercial allocations. Allocations in all Use Areas containing communities are less than 15 percent of the total allocation, and spring and fall allocations are limited to 10 and 25 percent respectively (but averaging less than 10 percent). Alternative 4 proposes a limited number of large group areas and has the most potential to restrict commercial use.

Alternative 2 would have the second lowest potential to have effects on unguided recreationists. It has the second lowest potential for crowding because it has the second lowest commercial allocations. It has reduced allocations (from 10 to 30 percent of the carrying capacity) in Use Areas containing communities. Commercial allocations are limited to ten percent in spring and fall. Large group areas would not be designated. Alternative 2 has some restrictions on commercial use.

Alternative 5 would have potential effects on unguided recreationists similar to Alternative 2. Alternative 5 would have a slightly higher potential for crowding non-commercial use, although the total allocation and allocations in Use Areas containing communities are similar between the two alternatives. Alternative 5 proposes large group areas, which would reduce potential effects of large groups on unguided recreationists. Commercial use allocations would be limited to ten percent only during the spring season. Alternative 5 has some restrictions on commercial use.

Alternative 3 has the most potential to have effects on unguided use. It has the highest allocation and the highest potential for crowding. It designates the most areas for large group use. It does not reduce commercial allocations in Use Areas that contain communities and it does not limit commercial use in the spring and fall seasons. Alternative 3 has fewer restrictions to commercial use to reduce social conflicts than the other alternatives.

Alternative 1 would maintain current levels of use unless additional analysis allowed for an increase in use at a specific location. As demand and consideration of commercial recreation use varies considerably by district, the overall impact to the general public in specific locations cannot be predicted.

Estimated Number Of People Per Year Who Could Use Commercial Services to Access The National Forest In the Analysis Area

Approximately 15,500 people per year used outfitter/guides to visit the forest on average from 1999 to 2001. Assuming an average guided group size of six people, Alternative 3 would allow these numbers to increase up to 235,782 people annually. Alternative 5 would allow 105,180 people, followed closely by Alternative 2 with

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97,050 people per year. Alternative 4 would allow 36,354 people annually. Alternative 1 would hold the use numbers at the current level, pending additional analysis on a case-by-case base as time and funding may allow. These alternatives show a maximum allocation and may not represent actual future use. The economy, improvements for access, and willingness of commercial outfitter/guides to provide these services would determine actual use.

Number of Enclaves and Fifteen Percent Areas Allowing Large Group Use

Group size was an important component in potential conflicts between guided and unguided recreationists, with guided use generally occurring in larger group sizes. Alternatives 3, 4, and 5 propose varying numbers of Enclaves and Fifteen-Percent areas to accommodate people recreating in large guided groups (Tables 2-4, 2-5, 2-7, 2-8, 2-10, and 2-11). These areas would then provide a defined recreation experience, which could include the presence of large groups. Other recreationists could anticipate the presence of large groups in these areas and avoid them if they desired a different recreation setting. However, both guided and unguided recreationists could use these large group areas.

Alternative 3 designates the most large group areas, 46 (33 Enclaves and 13 Fifteen-Percent areas); followed by Alternative 5, designating 36 large group areas (28 Enclaves and 8 Fifteen-Percent areas); and Alternative 4, with 15 large group areas (12 Enclaves and 3 Fifteen-Percent areas). Alternatives 1 and 2 do not designate any specific areas for large group use.

The Forest Plan and Recreation Opportunity Spectrum (ROS) are used to define the types of recreation experience available (Appendix F). Current recreation experiences range from Primitive to Rural ROS class, with the majority of the area providing Primitive or Semi-Primitive recreation opportunities. The Use Area allocations were made within the carrying capacities, incorporating the criteria of each ROS class; therefore, none of the ROS classifications would be changed initially under the alternatives. Over time, concentrated recreation and tourism in enclaves may cause the ROS setting to become Roaded Natural, Roaded Modified, or Rural, as allowed in the Forest Plan. Although no specific allocations would be made under Alternative 1, the commercial allocation is equal to the use authorized on a case-by-case basis from current levels up to 50 percent of the total carrying capacity.

All of the alternatives would provide the variety and types of recreation experience anticipated in the Forest Plan. Commercial activities and allocations would not exceed Forest Plan standards and guidelines under any alternative. This includes commercial recreation use occurring within wilderness, and eligible Wild and Scenic River corridors.

Some alternatives identify specific areas for large group use as allowed in the Forest Plan. While group size is one of several factors affecting recreation experience, large group size specified in this analysis is not considered to be significant enough by itself to change the ROS setting in either the Fifteen-Percent or Enclave areas. If regularly occurring large group use in Enclaves should result in the need for more development and site hardening in the future, these cumulative changes may cause the ROS setting to become more developed. The Forest Plan allows ROS changes in development level up to the Rural ROS class in Enclaves. Alternative 3 identifies

All of the alternatives would provide the variety and types of recreation experience anticipated in the Forest Plan.

approximately 6,100 acres in Enclave areas having the potential to change to a more developed ROS class; Alternative 5 identifies approximately 4,900 such acres; and Alternative 4 identifies approximately 2,100 such acres. Alternatives 1 and 2 do not designate any Enclave areas for large group use and do not permit any commercial activities with group sizes larger than generally allowed by the Forest Plan LUD.

Opportunity for Solitude

The desire for solitude and the ‘Alaska’ experience is an important consideration for both guided and unguided recreation use. The opportunities for solitude are defined in the ROS and Forest Plan by specifying the expected number of other groups encountered and the size of those groups for a certain type of social experience.

For this analysis, the opportunities for solitude are measured by the overall commercial allocations and seasonal allocation for each Use Area. Higher commercial allocations would increase the potential for high levels of use and a corresponding higher number of encounters and fewer opportunities for solitude. Conversely, lower allocations result in fewer commercial groups using an area, thereby providing more opportunities for solitude.

Within the analysis area, in all alternatives opportunities for solitude would be available at levels anticipated by the Forest Plan. However, some Use Areas would have fewer opportunities for solitude during the summer season.

Alternative 4 would provide the most opportunity for solitude because it has the lowest commercial allocation and it limits average commercial use to less than 10 percent of the carrying capacity on average for all seasons. Alternative 2 would follow because it has the next lowest total allocation and also limits commercial use to ten percent of the carrying capacity during the spring and fall seasons. Alternative 5 provides the third most opportunity for solitude because, while it has an allocation similar to Alternative 2, it limits commercial use to ten percent in only the spring season. Alternative 3 would provide the least opportunity for solitude because it has the highest allocation throughout all seasons. The effects of Alternative 1 may vary. Expanded use may occur in specific locations where approved, following additional analysis as staffing and funding allow.

Potential commercial use level for Wilderness (opportunities for solitude)

Wilderness values include solitude, sense of isolation, sense of remoteness, self-reliance, challenge and risk, and ‘untrammelled’ natural character. Implementation of an action alternative may result in increased potential for higher levels of use in wilderness, but it is difficult to accurately predict where increased use will occur or how much impact to wilderness values will take place.

To provide a comparison for each alternative, and effects on wilderness, an estimated level of potential use was developed based on the average for the 1999 to 2001 commercial use level of 891 total groups (Table 3-24). Alternative 3 is projected to have the most commercial use in wilderness (15,147 total groups), followed by Alternatives 5 (7,128 groups), 2 (6,237 groups), and 4 (2,317 groups). Alternative 1 makes no specific allocation.

If Alternative 1 is chosen, some increases in growth may occur as districts consider additional requests for use and initiate separate analyses to consider them. With

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requests for additional use in wilderness areas pending, some increase in use is anticipated for all action alternatives. The amount of increase would be affected by various external factors including: the economy, access to communities from which use may originate, weather, and willingness of commercial outfitter/guides to expand their services.

All alternatives would provide commercial use levels that are consistent with Forest Plan wilderness goals, objectives, standards, and guidelines.

Issue 2: Economic Opportunities and Potential Effects on Commercial Outfitter/Guide Businesses

Allocation available in number of group days to outfitted or guided recreationists

The commercial use allocation is the primary way the alternatives affect the commercial recreation industry. Total allocation can be related to the general economic benefits of commercial recreation. Higher allocations may mean that more people use commercial services to access the national forest, resulting in more income to businesses. The related economic benefits would provide the highest potential for commercial recreation growth. However, higher allocations may not be beneficial to types of outfitter/guide businesses that rely on opportunities for solitude. The alternatives display maximum allocations and may not represent actual future use.

Total commercial allocation and the allocation by individual Use Area and season vary by Alternative (see Tables 2-1, 2-2, 2-3, 2-6, and 2-9). Alternative 3 makes the highest total allocation of 39,297 group days, followed by Alternative 17,530 group days, Alternative 2 with 16,175 group days, and Alternative 4 with 6,059 group days (Table 3-12). Alternative 1, the no-action alternative, makes no commercial allocation but does allow commercial use on a case-by-case basis. The current moratoriums limit the potential for growth.

Group days available for industry growth above current average use levels

Commercial allocations are compared to the 1999-2001 average commercial use level, (891 groups, as shown on Table 3-24) to determine growth opportunities or restraints. Commercial allocations in the action alternatives are above current commercial use levels over the analysis area as a whole. Current use that is at or above the allocations for specific Use Areas will be limited or, if necessary, allocated through a competitive process.

In all alternatives, there is substantial room for overall commercial use to grow beyond the level averaged over the period of 1999-2001. Alternative 3 would have the most available unused allocation with 37,940 group days, followed by Alternative 5 with 16,048 unused group days, Alternative 2 with 14,447 unused group days, and Alternative 4 with 3,745 group days.

The outcome of the potential expansion of use provided by all alternatives could have a variety of effects depending on the businesses. In some places, the alternatives with the highest allocations for group use might cause some displacement of existing outfitter/guides who advertise a more primitive setting near

Higher allocations may mean that more people use commercial services to access the national forest, resulting in more income to businesses. However, higher allocations may not be beneficial to types of outfitter/guide businesses that rely on opportunities for solitude.

communities or in Use Areas that previously have little use. All alternatives would accommodate use levels consistent with Forest Plan standards and guidelines.

Number of Use Areas by seasons approaching, at, or over allocated capacity

Using data averaged over the period of 1999-2001, it is evident that seasonal commercial use is within 20 percent of proposed seasonal allocation for some Use Areas for some alternatives (see Tables 3-19, 3-20 and 3-21). In other areas and seasons, some alternatives are at, or over seasonal allocations. This may result in limits to current use levels, restriction of future entry, or less growth of outfitter/guide seasonal operations in Alternatives 2, 4, and 5. Outfitter/guides would have to move to areas with available capacity or compete for the commercial use allowed in these Use Areas under a competitive process established by the Forest Service.

If commercial use levels were to reach the maximum allocation, commercial use would be limited to the allocation level as identified by any alternative. This allocation could not be exceeded without additional environmental analysis. Under the displayed alternatives, the spring season has the greatest potential for limits, followed by the fall season.

Current use levels would be approaching, at, or near the seasonal allocation in six Use Area seasons under Alternative 2, four Use Area seasons under Alternative 5, and four Use Area seasons under Alternative 4. Alternative 3 has no Use Areas at or near the allocation. Alternative 1 is representative of existing use, and at present use levels in all Use Areas for commercial use is less than five percent of the estimated capacity for all users. The existing use is less than five percent of the total for the project area. In spite of this, some Use Areas report no use and others experience as much as 25 percent of the estimated recreation capacity reported as currently being used in some seasons (Use Area 04-05, Southwest Admiralty). The expected rate of growth cannot be determined for each Use Area and will vary depending on the attractions, proximity to communities, weather, or market conditions. A discussion of recreation and tourism trends is presented in Chapter 3.

Number of Enclaves and Fifteen-Percent Areas Allowing Large Group Use

Large groups are primarily associated with tour boats offering nature viewing recreation experiences. Large groups (groups with 21 or more persons) currently account for approximately 7 percent of the groups visiting the forest but demand for this type of recreation is increasing. Most large group use occurs during summer. Large group use occurs in relatively few areas of the forest because the businesses providing services are constrained by the need to maintain schedules and the need for access points that can accommodate a large number of visitors.

Alternatives 3 and 5 would allow for growth in the industry by providing more large-group areas and scheduling flexibility. Alternative 4 would provide approximately the same number of areas currently being used by large groups. Additional large group areas would not be designated under Alternatives 1 and 2.

Alternative 3 identifies 46 large group areas (33 Enclaves, 13 Fifteen-Percent areas), followed by Alternative 5 with 36 large group areas (28 Enclaves, 8 Fifteen-Percent areas). Alternative 4 identifies 15 large group areas, with 12 Enclaves and 3 Fifteen-Percent areas.

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Percent of Recreation Capacity Allocated To Commercial Use

The Forest Plan allows for up to half of the appropriate carrying capacity to be allowed for commercial recreation use. Once a carrying capacity was developed for the project area, the alternatives were developed to consider the level of commercial recreation use that might be allowed.

The alternatives provide for a range of the recreation capacity to be allocated for commercial recreation use. The current level of use by commercial recreation providers is approximately 4 percent on average for the analysis area. The average commercial use in group days and the percentage of the carrying capacity by season for the 1999-2001 seasons is displayed in Chapter 3 Table 3-8.

Alternative 3 provides for 50 percent of the total carrying capacity to be allocated to commercial recreation use. Alternative 5 allows 23 percent of the carrying capacity to commercial recreation use followed by, Alternative 2 at 21 percent, and Alternative 4 at 8 percent. Unlike Alternative 3 where the calculated use is at a specific percentage for all Use areas, Alternatives 2, 4, and 5 have some variations within their Use Areas by District to accommodate specific issues by communities or other users. Alternative 1 could allow as much commercial recreation use as Alternative 3, but as no allocation is specifically identified for this alternative, additional use could only be allowed after the completion of additional analysis.

The alternatives accommodate all types of commercial outfitter/guides by season as appropriate. Spring and fall seasons are generally dominated by big game hunters or people fishing for steelhead since seasons set by the State are generally open at these times. The summer season accommodates sightseers, hikers, and fishers.

Alternatives 2, 4, and 5 identify Use Areas where the current use by commercial recreation users is either approaching, at, or over the allocation (See Tables 3-19, 3-20, and 3-21). If any of these alternatives is selected for implementation, some action will be needed to bring the level of use into alignment with the allocation approved. It is likely that a competitive process would be initiated in some locations to provide the tool to assist in the allocation process.

Contributes to business stability and certainty by establishing predictable use levels and allowing for multi-year special use permits

The action alternatives would provide a degree of business stability and would reduce uncertainty in the future for some outfitter/guide businesses. Alternatives 2, 3, 4, and 5 provide enough capacity to sustain current businesses and offer a potential growth in most Use Areas by season. The action alternatives would also an opportunity to allow for multi-year use permits since the current and projected impacts to the resources are evaluated by each alternative. The action alternatives would provide a predictable quality of recreation setting to enhance business stability and sustainability. However, as previously noted, some uses are dependent on the availability of a specific resources (fish and wildlife species) so could change if required to meet temporary management objectives or emergency set by the responsible agency or board (ADF&G or Federal Subsistence Boards).

Alternative 1 does not make a commercial allocation and may not provide any degree of certainty for future business. New permits would be for temporary use only, pending additional environmental analysis to consider cumulative effect of

permitted use over time. No additional multi-year permits would be issued. Existing multi-year priority use authorizations would be converted to annual permits after their expiration date. Unless additional environmental analysis was conducted to address a specific area or use, permits could only be reissued on an annual basis.

Issue 3: Conflicts Within the Commercial Recreation Industry

There is a broad diversity in the types and sizes of businesses involved in commercial recreation and the recreation activities they promote. Some of these differences can lead to conflicts among the different commercial recreation businesses. The alternatives provide different commercial and seasonal allocations, strategies, and measures to reduce potential conflicts within the recreation industry. Following is a discussion of issues related to Issue 3:

- establishes recreation management seasons,
- limits commercial allocations in the spring season,
- limits commercial allocations in the fall season,
- designates Enclaves and Fifteen-Percent Areas for large group use, and
- specifies maximum size of large groups.

Establishes recreation management seasons

To better manage the different activities and to assess the potential impacts for each alternative, specific seasons were identified. Use by season varies as weather, temperature, length of daylight, and hunting or fishing seasons govern some activities. Because little or no commercial recreation use occurs during the winter season, no management is proposed in this analysis for the winter season.

Alternatives 2, 3, 4 and 5 establish a recreation management season. Use Areas in these alternatives identify a level of use by season to reflect either a management objective (Alternative 3, allowing for half the carrying capacity allocation as consistent with the Forest Plan), or are adjusted to meet other management concerns. Alternative 1 does not identify a specific use by season. Management objectives or concerns are not generally addressed in Alternative 1 as expansion of use or consideration of new uses will require an additional analysis.

Commercial Allocation (Limits To The Spring and Fall Seasons)

The seasonal allocations in each Use Area would provide different levels of use that reflect perceptions of crowding. In general, higher use levels would provide more opportunities for groups who are not seeking solitude. The lower allocations would provide the potential of fewer group encounters and fewer conflicts between guided groups.

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Table 2-13. Seasonal Allocation for the Alternatives

Alternative	Spring Allocation	Summer Allocation	Fall Allocation	Total
1	*	*	*	*
2	1,693	12,588	1,894	16,175
3	8,463	21,359	9,475	39,297
4	1,202	3,722	1,135	6,059
5	1,995	10,737	4,798	17,530

The effects of use vary by season. The spring season would be most affected by Alternative 3 and followed by Alternatives 5, 2, and 4. As the total number of group days for Alternative 3 is more than four times in any other alternative, it is anticipated to have more of a negative effect in regards to crowding, competition of sites, competition for resources, and availability for solitude. Alternative 2 and 5 vary in the spring season allocation only by additional allocation of use around the Sitka Use Area (an additional 300 group days is allowed within the Sitka Use Area). Alternative 4 allows for fewer group days in almost all Use Areas than in Alternatives 2 or 5 with the exception of an increase in use for the Peril Strait Use Area, which accommodates a use level three times higher.

The summer season would be most affected by Alternative 3 and followed by alternatives 2, 5, and 4. Alternative 2 and 5 show a considerable amount of variability by Use Areas while the overall number of group days allocated is very similar overall. Alternative 4 allows for less than half of what is proposed in Alternatives 2 and 5 so the effects to competition for sites, competition for resources, and effects to solitude will be less. However, Alternative 4 does allow for more than twice the existing amount of use so, in most locations, an increase in use can be anticipated and could negatively effect existing users.

Again, the fall season would be most affected by Alternative 3 and followed by alternatives 5, 2, and 4. The fall season in Alternative 5 allows more use in the northern portion of the analysis area and Sitka than does Alternative 2. Alternative 4 allows for a considerable reduction in most Use Areas with the exception of some locations where they are higher to accommodate traditional areas for hunting.

No allocation is made in Alternative 1 for any season so the impacts as a result of additional use will require additional analysis.

In general, Alternative 4 provides for the less crowding in all alternatives. Alternatives 2 and 5 will be similar in their effects in most Use Areas. Alternative 3 has the highest potential to affect crowding. Alternative 1 might reach use levels as anticipated in Alternative 3, but only as additional analysis would allow or accommodate this growth.

Measures to Reduce Industry Conflict

The alternatives address conflict potential among outfitter/guide businesses through their design and mitigation measures. Management strategies were developed to reduce potential conflicts among outfitter/guides. Many of these also serve to reduce potential conflicts between commercial and non-commercial users. These include

limits on group size, the number of groups in an area at one time, seasons of use, length of stay limits, restrictions on access, and mitigation measures to reduce social conflicts. Most measures apply to all of the action alternatives.

Some access methods are limited or excluded for commercial outfitter guides to reduce conflicts in the action alternatives. Helicopter and commercial off highway vehicle (OHV) use are not proposed in any alternative. If these access methods were to be considered, a separate environmental analysis would need to be undertaken. Motorized boat restrictions apply equally to all the action alternatives. Wheeled plane access is allowed at varying levels among the alternatives.

Generally, the higher levels of use would result in greater potential for conflict. Alternative 3 would provide the highest amount of use during all seasons and thus would have the highest potential for conflict. Alternatives 2, 4, and 5 would provide lower allocations, especially during the spring and fall hunting seasons. Alternative 4 would have the lowest potential for conflicts since it has the lowest seasonal and overall allocations.

Alternatives 2 and 5 would have the same potential for conflicts during the spring since Use Area allocations would be the same (Tables 2-2 and 2-9). However, the potential for conflicts would be higher during the fall season under Alternative 5.

Alternatives 3, 4 and 5 would further reduce the potential for conflict between large groups and hunters because large group use of the Fifteen Percent areas would be authorized only in the summer and not during the spring and fall. Alternatives 3, 4, and 5 limit group size in the large group areas to a maximum of 75 people, and only one large group can be in an area at a time to limit social impacts on other large groups and other users.

Alternative 1 does not provide specific measures to reduce conflict between outfitter/guides. Measures could be developed on a case-by-case basis.

Designates Enclaves and Fifteen-Percent Areas For Large Group Use

Designation of large group areas would reduce the potential for some conflicts by accommodating recreationists in large groups at appropriate sites.

Large group areas provide places where businesses can provide services to people who prefer to recreate in large groups. Large group areas also identify places where other outfitter/guides can expect to see large groups and can avoid these areas if they desire a different recreation setting. The areas also serve to concentrate large groups and their associated resource impacts into specific portions of the forest. Seasonal limits on large group use would reduce potential conflicts between big game guides and tour boat groups. Other areas of the forest would be available for outfitter/guides who serve small groups.

Large group areas vary by number and location in the alternatives. Alternatives 3, 4, and 5 designate large group areas for concentrating large group use to minimize user conflicts. Groups in these areas would be limited to a maximum of 75 people, and only one large group would be able to use an area at a time. The most large group areas, 46, would be designated under Alternative 3. Alternative 5 would designate the second most large group areas with 36. Alternative 4 would designate the fewest large group areas with 15. Alternatives 1 and 2 do not identify any areas for large

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group use. Enclaves would be available for use in all seasons, but Fifteen-Percent Areas are so named because they would only be available for use by large groups during 15 percent of the primary use, or summer season.

Alternatives 2

Table 2-14. Comparison of Alternatives by Issue

Issue / Unit of Measure	Alternative				
	1	2	3	4	5
Issue 1—Recreation Opportunities for Guided and Unguided Recreationists					
• Total recreation carrying capacity (group days) available to guided recreationists	**	16,175	39,297	6,059	17,530
• Amount of recreation available to unguided recreationists	40,658	65,141	42,019	75,257	63,786
• Estimated number of people per year who could use commercial services to access the national forest in the analysis area (assumes average commercial group size of six)	243,948	97,050	235,782	36,354	105,180
• Commercial allocation for spring (opportunities for solitude)	***	1,693	8,463	1,202	1,995
• Commercial allocation for summer (opportunities for solitude)	***	12,588	21,359	3,722	10,737
• Commercial allocation for fall (opportunities for solitude)	***	1,894	9,475	1,135	4,798
• Potential commercial use level for Wilderness (opportunities for solitude)	891	6,237	15,147	2,317	7,128
• Number of Enclaves allowing large group use	0	0	33	12	28
• Approximate area (acres) of Enclaves (Potential for change in ROS)	0	0	6,100	2,100	4,900
• Number of Fifteen-Percent areas allowing large group use	0	0	13	3	8
• Approximate area (acres) of Fifteen-Percent areas	0	0	3,360	570	1,860
• Limits on commercial use in Use Areas with communities	No	Yes	No	Yes	Yes
Issue 2—Economic Opportunities and Potential Impacts on Commercial Outfitter/Guide Businesses					
• Commercial allocation available in number of group days	NA	16,175	39,297	6,059	17,530
• Percent of recreation capacity allocated to commercial use	3-50**	21	50	8	23
• Average (1999-2001) commercial use levels in number of group days	2,500	2,500	2,500	2,500	2,500
• Group days available for industry growth above current average (1999-2001) use levels	NA	13,675	36,797	3,559	15,030
• Number of Use Areas seasons approaching, at, or near allocated capacity	NA	9	0	7	4
• Number of Enclaves allowing large group use	0	0	33	12	28
• Number of Fifteen percent areas allowing large group use	0	0	13	3	8
• Contributes to business stability and certainty by establishing predictable use levels and allowing for multi-year Special Use permits	No	Yes	Yes	Yes	Yes
Issue 3—Conflicts Within the Commercial Recreation Industry					
• Establishes recreation management seasons.	No	Yes	Yes	Yes	Yes
• Limits commercial allocations in the spring season	Yes	Yes	Yes	Yes	Yes
• Limits commercial allocations in the fall season	No	Yes	No	Yes	No
• Designates Enclaves and Fifteen-Percent Areas for large group use	No	No	Yes	Yes	Yes
• Specifies maximum size of large groups	No	No	Yes	Yes	Yes
** No specific allocation is made. Commercial use is allowed on a case-by-case basis up to 50 percent of the recreation carrying capacity.					

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Mitigation Measures and Monitoring

Mitigation Measures

The analysis documented in this EIS discloses the possible adverse impacts that may occur from implementing the actions proposed under each alternative. Measures have been formulated to mitigate or reduce these impacts. These measures were guided by the direction from applicable laws and regulations, manual direction, the Forest Plan, and other sources such as the *Southeast Alaska Unit 4 Brown Bear Management Strategy* (Alaska Board of Game 2000).

A comprehensive list of mitigation measures applies to the commercial recreation activities for all of the action alternatives. These are listed in Appendix C, Mitigation Measures. In addition, site-specific resource concerns and mitigation measures are listed on the Use Area cards in Appendix A and on the Large Group Area Cards in Appendix B. Mitigation measures would be incorporated at the implementation stages during the Special Use permit preparation and administration. The existing mitigation measures have generally been effective in reducing or eliminating potential negative impacts. Resource concerns and mitigation measures may be further refined during the monitoring and administration of commercial use if additional information becomes available. Monitoring of the mitigation measures for this project will be carried out during the administration of special use permits or when it can be accommodated through other resource planning efforts, to determine if the measures are effective in mitigating impacts.

Monitoring

Monitoring is gathering data and information and observing the results of management activities to provide a basis for evaluation. It serves as a quality control process for implementing the project. The evaluation of monitoring results for this project will provide a feedback loop to make corrective actions as needed to provide resource protection and the desired recreation opportunities.

Monitoring is a critical component of this project. Commercial recreation management at the scale proposed in this analysis is relatively new to the Forest Service in Southeast Alaska. Many of the social facets of recreation are not well understood. Recreation use levels are dynamic and fluctuate from year to year. Reliable site-specific unguided recreation use information is not currently available. The environmental effects of recreation use are also not well known. Through monitoring, the Forest Service can achieve a better understanding of these effects and adapt its management as necessary.

A monitoring plan is provided in Appendix D. It defines monitoring steps during Special Use permit administration and for specific resources. While some monitoring is already a part of special use administration, additional and site-specific monitoring is included in the monitoring plan for this analysis. Annual interagency reviews will be a new and important part of the monitoring plan.

Findings and Disclosures

All alternatives in the Shoreline Outfitter/Guide EIS are consistent with other federal and state environmental laws and executive orders. These laws and orders have been met to the extent practicable and the effects have been analyzed and documented. Several of the laws and executive orders listed in Chapter 1 require project-specific

findings or other disclosures. These are included here and in the Record of Decision. They apply to all alternatives considered in detail in this EIS.

NFMA Planning

Tongass Land and Resource Management Plan 1997 (Forest Plan)

All project alternatives fully comply with the Forest Plan. This project incorporates all applicable forest-wide standards and guidelines and management area prescriptions as they apply to the analysis area, and complies with Forest Plan goals and objectives. All required interagency review and coordination has been accomplished.

The Forest Plan complies with all resource integration and management requirements of 36 CFR 219 (219.14 through 219.27). Application of Forest Plan direction for the analysis area ensures compliance at the project level.

Laws

Endangered Species Act

None of the action alternatives is anticipated to have a direct, indirect, or cumulative effect on any threatened or endangered species in the Shoreline Outfitter/Guide analysis area or elsewhere. The National Marine Fisheries Service was consulted regarding the actions described and the effects on threatened and endangered marine species within the proposed analysis area. Formal consultation with the U.S. Fish and Wildlife Service was not necessary for this project since no terrestrial threatened or endangered species are known to occur within the analysis area. A Biological Assessment has been completed and is included in the planning record.

Bald and Golden Eagle Protection Act

To comply with the Bald and Golden Eagle Protection Act, management activities are restricted within 330 feet of an eagle nest site by a Memorandum of Understanding (MOU) between the Forest Service and the U.S. Fish and Wildlife Service. None of the action alternatives is anticipated to have a significant direct, indirect, or cumulative effect on any bald eagle habitat. If any nests are found that may be affected, the MOU and Forest Plan standards and guidelines will be followed. Outfitter/guides will not camp within 330 feet of an active eagle nest, as noted in the mitigation measures section of this document (Appendix C).

National Historic Preservation Act

Heritage resource surveys of various intensities have been conducted in the Shoreline Outfitter/Guide analysis area, following inventory standards approved by the Alaska State Historic Preservation Officer and the Advisory Council on Historic Preservation. These surveys include background and existing literature searches and fieldwork complete with subsurface testing. Native communities have been contacted, and public comment encouraged. The opportunity to discuss known or suspected heritage resources in or near the analysis area was encouraged at public meetings held in Sitka, Petersburg, Angoon, Hoonah, Klukwan, and Kake. The following federally recognized tribes were consulted during the analysis:

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- Petersburg Indian Association
- Sitka Tribe of Alaska
- Shaqua Indian Village
- Chilkat Indian Village
- Hoonah Indian Association
- Organized Village of Kake
- Angoon Community Association
- Chilkoot Indian Association
- Douglas Indian Association

The State Historic Preservation Officer will be consulted with our findings that no known historical properties will be affected because of our documentation and monitoring efforts.

Federal Cave Resource Protection Act of 1988

Forest Plan karst and caves standards and guidelines are applied to areas known or suspected to contain karst resources. No guided use of caves will be permitted under this analysis. A separate analysis would be needed if an outfitter/guide should propose use of a cave. Therefore the action alternatives will not have a direct, indirect, or cumulative effect on any significant cave in the analysis area.

Alaska National Interest Lands Conservation Act (ANILCA) Evaluations and Findings

A subsistence evaluation was conducted for the five alternatives considered in detail, in accordance with ANILCA Section 810. The evaluations in the Subsistence Report on abundance and/or distribution, access, and competition for harvested resources in the Shoreline Outfitter/Guide analysis area indicate that there will not be a significant possibility of a significant restriction to the customary and traditional subsistence uses of wildlife, fish and shellfish, marine mammals, other foods, or timber resources as a result of this analysis.

However, past habitat change due to timber harvest and an expanding human population make it possible that there could be a restriction to the customary and traditional subsistence uses of salmon and deer in the distant future in portions of the analysis area. This possibility exists regardless of the implementation of any of the alternatives in this analysis.

Clean Water Act

Congress intended the Clean Water Act of 1972 (Public Law 92-500) as amended in 1977 (Public Law 95-217) and 1987 (Public Law 100-4) to protect and improve the quality of water resources and maintain their beneficial uses. Section 313 of the Clean Water Act and Executive Order 12580 of January 23, 1987 addresses Federal agency compliance and consistency with water pollution control mandates.

Agencies must be consistent with requirements that apply to “any governmental entity” or private person. Compliance is to be in line with “all Federal, State, interstate, and local requirements, administrative authority, and process and sanctions respecting the control and abatement of water pollution.”

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The Clean Water Act (Sections 208 and 319) recognized the need for control strategies for nonpoint source pollution. The National Nonpoint Source Policy (December 12, 1984), the Forest Service Nonpoint Strategy (January 29, 1985), and the USDA Nonpoint Source Water Quality Policy (December 5, 1986) provide a protection and improvement emphasis for soil and water resources and water-related beneficial uses. Soil and water conservation practices (BMPs) were recognized as the primary control mechanisms for nonpoint source pollution on National Forest System lands. The Environmental Protection Agency supports this perspective in their guidance, “Nonpoint Source Controls and Water Quality Standards” (August 19, 1987).

The site-specific application of BMPs, with a monitoring and feedback mechanism, is the approved strategy for controlling nonpoint source pollution as defined by Alaska’s Nonpoint Source Pollution Control Strategy (October 2000). In 1997, the State approved the BMPs in the Forest Service’s Soil and Water Conservation Handbook (FSH Handbook 2509.22, October 1996) as consistent with the Alaska Forest Resources and Practices Regulations. This Handbook is incorporated into the Tongass Land Management Plan.

Recreation activities and uses in this project will occur in accordance with standards, guidelines and direction contained in the Forest Plan, Best Management Practices and applicable Forest Service manual and handbook direction. Appendix C (Mitigation Measures) contains specific practices prescribed to prevent or reduce non-point sediment sources. Monitoring and evaluation of the implementation and effectiveness of Forest Plan standards and guidelines and Best Management Practices will occur. Project activities are expected to meet all applicable State Water Quality Standards Regulations.

State regulations provide for variances from anti-degradation requirements and water quality criteria. The outfitter/guides are responsible for compliance, including obtaining any variance required by the state. The Forest Service will monitor for compliance through permit administration. The Forest Service expects the Shoreline Outfitter/Guide analysis area activities to fully qualify for any variance if required by the state, according to the criteria in 18 AAC 70.015.

All recreation activities and uses in this project will occur in accordance with Best Management Practices listed in 33 CFR 323.4(a). No permits are expected that would fall under Section 404 of the Clean Water Act.

Clean Air Act

Emissions expected from implementation of any of the action alternatives would be of short duration and are not expected to exceed state of Alaska Ambient Air Quality Standards (Alaska Administrative Code, Title 18, Chapter 50).

Coastal Zone Management Act

Under the Coastal Zone Management Act (CZMA) of 1972, activities conducted by the Forest Service that affect the coastal zone must be consistent, to the maximum extent practicable, with the enforceable policies of the Alaska Coastal Management Program (ACMP). In addition, activities affecting the coastal zone that are conducted by non-federal parties under a Forest Service permit must also be

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consistent with the ACMP. The types of Forest Service permits that the State of Alaska and the Forest Service have agreed are likely to affect the coastal zone--and therefore require ACMP consistency review of the permit applicant's proposal--are listed in section 302 of the Memorandum of Understanding (MOU) between the State and the Forest Service on CZMA/ACMP consistency reviews. The types of special use permits analyzed in the FEIS and covered by this decision are not among those listed in the MOU as requiring ACMP review. In addition, the State has not requested review of these "unlisted" permit activities as provided under 15 CFR 930.54. Accordingly, no ACMP consistency review is required for these activities.

Magnuson–Stevens Fishery Conservation and Management Act

Based upon the analysis, the Forest Service has determined that the proposed activities are unlikely to adversely affect essential fish habitat within the Shoreline Outfitter/Guide analysis area.

According to the agreement between the National Marine Fisheries Service and the USDA Forest Service dated August 25, 2000, an assessment was done in this EIS that included:

- a description of the proposed action,
- an analysis of individual and cumulative effects of the proposed action on the essential fish habitat, the managed species, and associated species such as major prey species, including affected life histories,
- the Forest Service's views regarding effects on essential fish habitat, and
- a discussion of proposed mitigation, if applicable.

This determination was sent with the Draft Environmental EIS to the National Marine Fisheries Service for review.

Other Disclosures

Effects on Prime Farm Land, Range Land, and Forest Land

No prime farmland or rangeland will be adversely affected by any of the alternatives. Forest land will maintain its long-term productivity

Effects on Civil Rights, Women, and Minorities

This decision will not cause adverse impacts to civil rights, women, or minorities.

Executive Order 11593

Executive Order 11593 directs federal agencies to provide leadership in preserving, restoring, and maintaining the historical and cultural environment of the nation. The work accomplished for the Shoreline Outfitter/Guide analysis area in accordance with Section 106 of the National Historic Preservation Act meets the intent of this Executive Order.

Executive Order 11988

Executive Order 11988 directs federal agencies to take action to avoid, to the extent possible, the long and short-term adverse impacts associated with the occupancy and modification of floodplains. A floodplain is defined as the lowland and relatively flat areas adjoining inland and coastal waters including flood prone areas of off shore islands, including at a minimum that area subject to a one percent or greater of flooding in any given year.”

Recreation activities and uses will have minimal to no effect on floodplains. Forest Plan standards and guidelines and Best Management Practices for riparian areas are followed. Effects on floodplains from project activities have been avoided or minimized as much as possible.

Executive Order 11990

Executive Order 11990 requires federal agencies to avoid, to the extent possible, the long-term and short-term adverse impacts associated with the destruction or modification of wetlands.

This project avoids affecting wetlands whenever practicable, but because wetlands are so extensive in the analysis area, it is not feasible to avoid all wetland areas. Impacts due to recreational use of wetlands are expected to be minimal.

Executive Order 12898

Executive Order 12898 directs federal agencies to identify and address the issue of environmental justice, which concerns adverse human health and environmental effects of agency programs that disproportionately affect minority and low-income populations.

Public meetings were available to all people in and near the project area and advertised through the local media, newspaper, TV scanner, local radio stations, and posted flyers at grocery stores and other businesses. See Chapter 1, Public Participation.

Implementation of the action alternatives will not cause adverse health, social, or environmental effects that disproportionately affect minority and low-income populations. See also the ANILCA Section 810 findings.

Executive Order 12962

Executive Order 12962 directs federal agencies to conserve, restore, and enhance aquatic systems to provide for increased recreational fishing opportunities nationwide. Section 1 of the Executive Order is most pertinent to the Shoreline Outfitter/Guide analysis area. Section 1 directs federal agencies to evaluate effects on aquatic ecosystems and recreational fisheries, develop and encourage partnerships, promote restoration, provide access, and promote awareness of opportunities for recreational fishery resources.

The effects of this project on freshwater and marine resources were evaluated during the analysis. With the application of Forest Plan standards and guidelines, including

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those for riparian areas, no significant adverse effects on freshwater or marine resources will occur.

Partnerships continue to be used to leverage federal project funds to address water quality concerns in areas of the Tongass National Forest, although none have been proposed for recreational fisheries in conjunction with this analysis.

Executive Order 13007

Executive Order 13007 directs federal agencies to accommodate access to and ceremonial use of American Indian sacred sites by Indian religious practitioners and to avoid adversely affecting the physical integrity of such sacred sites. Consultation with local federally recognized tribes (See NHPA listing of tribes consulted) occurred during this analysis. The proposed action will not limit access to or ceremonial use of sacred sites by Indian religious practitioners and will not adversely impact the integrity of such sites.

Executive Orders 13084 and 13175

Executive Orders 13084 and 13175 direct federal agencies to consult and coordinate activities with federally recognized tribal governments. Consultation with local federally recognized tribes (See National Historic Preservation Act listing of the tribes consulted) occurred during this analysis.

Executive Order 13186

Executive Order 13186 directs federal agencies to coordinate their management efforts and to cooperatively manage migratory bird species. The USDA Forest Service and USDOI Fish and Wildlife Service have coordinated and cooperated to manage migratory bird species on this and other projects that could impact migratory birds.

Alternatives and Proposals Considered but Eliminated from Detailed Study

The following alternative and alternative components were considered during the analysis for the Shoreline Outfitter/Guide analysis area but were eliminated from detailed study in this EIS.

No Commercial Use on the National Forest

There was consideration of an alternative that would exclude commercial use of the national forest within the analysis area. Elimination of commercial use on National Forest System lands was dropped from further consideration because this matter is outside the scope of this analysis. Commercial use of the national forest is allowed and encouraged by legislation, specifically the Mineral Leasing Act of 1920, the Granger-Thye Act of April 24, 1950, the Wilderness Act of September 3, 1964, and Title V, Federal Land Policy and Management Act of October 21, 1976.

This congressional direction is the basis of Forest Service national policy, which encourages commercial recreation to provide for the recreational enjoyment of national forests by people who otherwise may not have the ability or opportunity to do so. Such a ban would deny access to most of the Tongass for a significant

proportion of visitors who do not have the necessary knowledge, skills, and equipment to access and enjoy this national forest. In addition, banning commercial use from the national forest would have a detrimental impact on the regional economy, which relies heavily on recreation and tourism. The Tongass National Forest is the main land manager in Southeast Alaska, and other land ownerships could not meet the needs for recreation.

Helicopters

We considered many methods of recreation access, including helicopters in areas outside of wilderness. Historically there have been few outfitter/guide helicopter landings within the analysis area. No helicopter use is currently permitted and no helicopter landings have been proposed by outfitter/guides within the shoreline zone of the analysis area. Therefore helicopter access was considered but eliminated from this analysis.

Off-highway Vehicles (OHVs)

Off-highway vehicles (OHVs) are a popular access method in some parts of the national forest. The IDT considered OHV access, but there has been no authorized historical commercial use from OHVs. The environmental impacts of OHV use are different than the impacts anticipated from limited uses of national forest such as hiking, freshwater fishing and photography, and as such, OHV use was eliminated from this analysis.

Large Group Areas

Numerous large group areas were considered but then eliminated from consideration. See Appendix B (Table B-2) for a list of the large group areas eliminated from consideration and the reason they were dropped.

Big Game Guided Hunting Allocations

The original 1998 proposed action made specific recreation carrying capacity allocations for big game guided hunting, primarily for brown bear hunting. Based upon public comment and additional analysis, this focus was determined to be too narrow. The proposed action was expanded to include all commercial recreation providers in the overall commercial recreation allocation. Big game guided hunting allocations are now included within the overall commercial recreation allocations in the alternatives. Specific allocations to individual guiding businesses will occur through the Special Uses administration process.

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Chapter 4

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Chapter 4

Lists

Glossary

Common Abbreviations

ABOG	Alaska Board of Game
ACOE	Army Corps of Engineers
ADEC	Alaska Department of Environmental Quality
ADF&G	Alaska Department of Fish & Game
AFHA	Anadromous Fish Habitat Assessment
AIRFA	American Indian Religious Freedom Act
AKDCBD	Alaska State Division of Community and Business Development
ANILCA	Alaska National Interest Lands Conservation Act
APE	Area of Potential Effects
AVSP	Alaska Visitors Statistics Program
BA	Biological Assessment
BBMT	Brown Bear Management Team
BE	Biological Evaluation
BMP	Best Management Practice
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CMT	Culturally Modified Tree
CSU	Conservation System Unit
CZMA	Coastal Zone Management Act
DEIS	Draft Environmental Impact Statement
DLP	Defense of Life and Property
DNR	Department of Natural Resources
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
FACA	Federal Advisory Committee Act
FCRPA	Federal Cave Resources Protection Act
FEIS	Final Environmental Impact Statement
FSM	Forest Service Manual
GIS	Geographic Information System
GMU	Game Management Unit
GUA	Guide Use Area
IDT	Interdisciplinary Team

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IRA	Inventoried Roadless Area
LAC	Limits of Acceptable Change
LTF	Log Transfer Facility
LUD	Land Use Designation
LWCA	Land and Water Conservation Act
MAP	Marine Access Point
MIS	Management Indicator Species
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NF	National Forest
NFMA	National Forest Management Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOI	Notice of Intent
NRHP	National Register of Historic Places
NSEAP	Northern Southeast Area Plan
OHV	Off-Highway Vehicle
PSD	Prevention of Significant Deterioration
RIM	Recreation Information Management System
RMO	Road Management Objective
ROD	Record of Decision
ROS	Recreation Opportunity Spectrum
RPA	Resources Planning Act
SEAWEAD	Southeast Alaska Wilderness Exploration Analysis and Discovery
SHPO	State Historic Preservation Officer
SOPA	Schedule of Proposed Actions
SQS	Soil Quality Standards
TLRMP	Tongass Land and Resource Management Plan
TMRZ	Tideland Management Resource Zone
TTRA	Tongass Timber Reform Act
USDA	United States Department of Agriculture
USFWS	U.S. Fish & Wildlife Service
VCU	Value Comparison Unit
VQO	Visual Quality Objective
WAA	Wildlife Analysis Area
Adfluvial fish	Species or populations of fish that do not go to sea but live in lakes and enter streams to spawn.

Definitions

Alaska Heritage Resource Survey (AHRS)	The official list of cultural resources in the State of Alaska, maintained by the Office of History and Archaeology, Alaska Division of Parks and Outdoor Recreation.
Alaska National Interest Lands Conservation Act (ANILCA)	The Alaska National Interest Lands Conservation Act of December 2, 1980, Public Law 96-487, 96 th Congress, 94 Stat. 2371-2551. Passed by Congress in 1980, this legislation designated 14 national forest wilderness areas in Southeast Alaska. Section 810 requires evaluations of subsistence impacts before changing the use of these lands.
All-terrain Vehicle (ATV)	See Off Highway Vehicle (OHV).
Alpine/subalpine habitat	The region found on a mountain peak above tree growth, generally above 1,500 feet in elevation.
Anadromous Fish	Fish (such as salmon and steelhead) that spend part of their lives in fresh water and part of their lives in salt water. Anadromous fish ascend from the sea to spawn in freshwater streams.
Aquatic Habitat Management Unit (AHMU)	A mapping unit that displays an identified value for aquatic resources. It is a mechanism for carrying out aquatic resource management policy (See Stream Class).
Beach Fringe	The area, typically forested, that is inland from saltwater shorelines.
Best Management Practices (BMP)	These are common-sense actions required by law to keep soil and other pollutants out of streams and lakes. BMPs are designed to protect water quality and to prevent new non-point source pollution.
Biological Assessment	A type of biological evaluation conducted for major federal actions requiring an environmental impact statement, in accordance with legal requirements under Section 7 of the Endangered Species Act (16 U.S.C. 1536(c)). The purpose of the assessment and resulting document is to determine whether the proposed action is likely to affect a species that has been listed or proposed as an endangered or threatened species.
Biological Evaluation	A documented Forest Service review of Forest Service programs or activities in sufficient detail to determine how an action or proposed action may affect any species that has been listed or proposed as threatened, endangered, or sensitive.
Biological Opinion	An official report by the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS) issued in response to a formal Forest Service request for consultation or conference. It states whether an action is likely to result in jeopardy to a species or adverse modification of its critical habitat.
Carrying Capacity	The estimated maximum number of groups of people who could recreate in an area while achieving management objectives.

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Commercial use	Any use of the national forest for which a fee is charged by an outfitter/guide.
Cumulative Effects	The impacts on the environment resulting from the addition of the incremental impacts of past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions occurring over time.
Deer Winter Range	Locations that provide food and shelter for Sitka black-tailed deer under moderately severe to severe winter conditions. Usually associated with high volume old growth stands at low elevation and with south aspects.
Desired Future Condition	A statement of the ultimate goal for resources and uses of an area.
Developed Recreation	Recreation that requires facilities that, in turn, result in concentrated use of an area, such as campgrounds and picnic areas. Facilities in these areas might include roads, parking lots, picnic tables, toilets, drinking water, and buildings (See Dispersed Recreation).
Direct Effects	Environmental effects that occur at the same time and place as the initial cause or action.
Direct Employment	The jobs that are immediately associated with a given activity.
Discount Rate	The rate used to adjust future benefits or costs to their present value.
Dispersal (recreation)	Refers to when recreationists spread out and travel farther to find desirable and available campsites or places to go ashore. In this analysis, dispersal is viewed as a short-term effect. As an example, a visitor may move farther down the shoreline of a bay because another group is using the preferred area.
Dispersed Recreation	Recreation activities that are not confined to a specific place and are generally outside developed recreation sites. This includes activities such as scenic driving, hiking, backpacking, hunting, fishing, snowmobiling, cross-country skiing, and recreation in primitive environments (See Developed Recreation).
Displacement (recreation)	More of a long-term effect than dispersal, resulting in a decision by visitors to avoid an area within a wilderness based on previous experiences such as regulation or crowding. Displacement could mean relocating to another wilderness or to a LUD that is capable of providing the desired recreation experience.
Distance Zone	Areas of landscapes visible from priority travel routes and use areas categorized by distance criteria (Foreground: 0 to ¼ mile, Middleground: ¼–½ to 3–5 miles, or Background: greater than 3–5 miles). Used as a frame of reference in which to discuss landscape characteristics and management activities.

Enclave	Area where large groups can occur on a regular basis throughout the season.
Endangered Species	Any species of animal or plant that is in danger of extinction throughout all or a significant portion of its range. Plant or animal species are identified by the Secretary of the Interior as endangered in accordance with the 1973 Endangered Species Act.
Endemic	Found in a particular locality; indigenous.
Environmental Impact Statement (EIS)	A statement of environmental effects of a proposed action and alternatives to it. A Draft EIS is released to the public and other agencies for review and comment. A Final EIS is issued after consideration of public comments. A Record of Decision (ROD) is based on the information and analysis in the Final EIS.
Essential Fish Habitat (EFH)	Includes all freshwater streams accessible to anadromous fish, marine waters, and intertidal habitats. This includes all Class I streams, marine waters, and intertidal habitats of the Shoreline Outfitter/Guide analysis area.
Estuary	An ecological system at a stream mouth, where fresh and saltwater mix, and where salt marshes and intertidal mudflats are present. The landward extent of an estuary is the limit of salt-intolerant vegetation, and the seaward extent is a stream's delta at mean low water.
Fall Season	For Alternatives 1-5: September 15 – October 31. For Alternative 5a: September 15 - October 10.
Fifteen-Percent area	Places where large groups can occur only on an occasional basis, for less than 15 percent of the primary use season.
Forbs	A category of herbaceous plants that are not included in the grass, shrub, or tree categories; generally smaller flowering plants.
Forest Plan	The Tongass Land and Resource Management Plan is the source of management direction for the Tongass National Forest. It specifies activity and output levels for a 10–15 year period.
Forest Land	Land at least 10 percent occupied by forest trees of any size or formerly having had such tree cover and not currently developed for non-forest use.
Forest-wide Standards and Guidelines	A set of rules and guidance that directs management activities and establishes the environmental quality, natural renewable and depletable resource requirements, conservation potential, and mitigation measures that apply to several land use designations.
Game Management Unit (GMU)	One of the 26 geographical areas listed under Game Management Units in the codified hunting and trapping regulations and the Game Unit Maps of Alaska

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Geographic Information System (GIS)	A computerized map database that is used to store and evaluate site-specific information.
Group	A group consists of one or more individuals recreating together as a social unit. Groups are used as the basic unit in this analysis (see Large Groups).
Group-days	A measurement of recreation use by groups using the national forest on a daily basis. In general, groups of 1-12 people, regardless of how they split into party sizes on shore, would count as one group. Any group with 13-20 people would count as two group days. Any group of 21-40 people would count as three group days. Groups of 41-75 people would count as four group days. Groups larger than 75 people would not be authorized. In Large Group Areas, groups would count as one group day regardless of whether or not they split into separate parties.
Groups-at-one-time	The number of groups that could recreate in a specific area without exceeding the number of group encounters specified by the ROS class to achieve a specific type of recreation experience.
Guide Use Area (GUA)	In the State of Alaska, each Game Management Units (GMU) is divided into one or more "Guide Use Areas" (GUA) for commercial outfitting and guiding. Guides must register with the Alaska Division of Occupational Licensing for up to three guide use areas a year.
Habitat	The sum total of environmental conditions of a specific place that is occupied by an organism, population, or community of plants or animals.
Heritage Resources	The prehistoric or historical district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places. The term includes artifacts, records, and remains that are related to and located within such properties.
Home Range (Community)	The recreation places lying within 15–30 miles of communities. This is the typical distance one could travel in a day by small boat or on a limited community road system.
Indirect Effects	Effects that occur later in time or are spatially removed from the activity but would be significant in the foreseeable future.
Indirect Employment	The jobs in service industries that are associated with or support a given activity.
Interdisciplinary Team (IDT)	A group of individuals with different scientific and resource expertise. The team is assembled out of recognition that no one scientific discipline is sufficiently broad to adequately address natural resource management. Through interaction, participants bring different points of view and a broader range of expertise.

Irretrievable Commitments	Loss of production or use of renewable natural resources for a period of time. The production or use lost is irretrievable, but not irreversible.
Irreversible Commitments	Decisions causing changes that cannot be reversed. Often applies to nonrenewable resources such as minerals and cultural resources.
Karst	A type of topography that develops in areas underlain by soluble rocks, primarily limestone. Dissolution of the subsurface layer results in areas of well-developed, surface drainage that are sinkholes, collapsed channels, or caves.
Land Use Designation (LUD)	A defined area of land, identified by the Forest Plan, to which specific management direction is applied.
Large Group	Group made up of a number of people that exceeds the general maximum group size for a specified type of recreation experience in the ROS. Large group size varies by LUD and ROS. In this EIS, large groups are defined as 21–75 people.
Large Group Area	For this EIS, specific areas where groups of 21–75 people may be allowed. The two types of large group areas are Enclaves and Fifteen-Percent areas.
Large Woody Debris (LWD)	Any large piece of relatively stable woody material having a least diameter of greater than 3.9 inches (10 centimeters) and length greater than 39 inches (one meter) that intrudes into the stream channel.
Log Transfer Facility (LTF)	Formerly referred to as Terminal Transfer Facilities, Log Transfer Facilities include the site and structures used for moving logs and timber products between land-based and water-based transportation.
Management Indicator Species (MIS)	Vertebrate or invertebrate wildlife species whose response to land management activities can be used to predict the likely response of other species with similar habitat requirements. The National Forest Management Act regulations prescribe the use of management indicator species.
Marine Access Points (MAPs)	The site and structures used for moving people, vehicles, logs, and timber products from land-based to marine water-based forms of transportation. These include log transfer facilities (LTFs).
Middleground	The visible terrain beyond the foreground where individual trees are still visible but do not stand out distinctly from the landscape. The area is located from ¼ to 3–5 miles from the viewer.

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Mitigation	Measures designed to counteract or reduce environmental impacts. These measures may include: avoiding an impact by not taking a certain action or part of an action; minimizing an impact by limiting the degree or magnitude of an action and its implementation; rectifying the impact by repairing, rehabilitating, or restoring the affected environment; reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or compensating for the impact by replacing or providing substitute resources or environments.
Monitoring	A process of collecting information to evaluate whether or not objectives of a project and its mitigation plan are being realized. Monitoring can occur at different levels: to confirm whether mitigation measures were carried out in the matter called for (Implementation Monitoring); to confirm whether mitigation measures were effective (Effectiveness Monitoring); or, to validate whether overall goals and objectives were appropriate (Validation Monitoring).
Multiple Use	The management of all the various renewable surface resources of the National Forest System so that they are used in the combination that will best meet the needs of the American people; harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land, with consideration being given to the relative values of the various resources.
Muskeg	A bog, often dominated by sphagnum moss, frequently with deep accumulations of organic material, occurring in wet, poorly drained northern regions.
National Environmental Policy Act of 1969 (NEPA)	An act declaring a national policy to encourage productive harmony between humans and their environment, to promote efforts that will prevent or eliminate damage to the environment and the biosphere and stimulate the health and welfare of humans; to enrich the understanding of the ecological systems and natural resources important to the nation and to a Council on Environmental Quality.
National Forest Management Act (NFMA)	A law passed in 1976 that amends the Forest and Rangeland Renewable Resources Planning Act, requires the preparation of Forest plans, requires the identification of management indicator species, and defines parameters for timber suitability.
National Register of Historic Places	A register of cultural resources of national, state, or local significance, maintained by the Department of the Interior.
Non-commercial use	In this analysis, refers to unguided use; use for which no special uses permit is necessary and for which no one receives financial remuneration or other gain for services provided on the national forest.
Numen	The spirit of a place.

Off Highway Vehicle (OHV)	A motorized four-wheeled vehicle less than 40 inches wide that is restricted by law from operating on public roads for general motor vehicle traffic.
Old-growth Forest	Ecosystems distinguished by old trees and related structural attributes. Old growth encompasses the later stages of stand development that typically differ from earlier stages in a variety of characteristics that may include larger tree size, higher accumulations of large dead woody material, multiple canopy layers, different species composition, and different ecosystem function. The structure and function of an old-growth ecosystem will be influenced by its stand size and landscape position and context.
Old-growth Habitat	A contiguous unit of old-growth forest habitat to be managed to maintain the integrity of the old-growth forest ecosystem.
Outfitter/guide	Those who, generally for compensation, facilitate the use, enjoyment, understanding, and appreciation of national forest recreation settings where the need for service has been identified and is compatible with objectives and management direction.
Particulates	Solid particles or liquid droplets suspended or carried in the air.
Plant Association	Climax forest plant community type representing the endpoint of succession.
Primary Use Season	The primary use season refers to the summer season during which visitation to the forest is generally the highest.
Priority Travel Routes	Land adjacent to the Alaska Marine Highway, cruise ship routes, flightseeing routes, high use recreation areas, and other marine and land-based travel routes, that are seen by more people, more frequently and for a greater duration of time than other areas of the national forest.
Priority Use Permit	Permits issued to an outfitter guide who has demonstrated successful performance in conducting operations on National Forest System lands for two or more consecutive years. Priority use, if authorized by the Deciding Officer, guarantees the operator a certain level of use for up to a 5-year period.
Productive Old Growth	Old-growth stands of 8,000 or more board feet of timber per acre, capable of producing at least 20 cubic feet per acre per year.
Proposed Action	An initial proposal by a federal agency to authorize, recommend, or implement an action.
Recreation Carrying Capacity	A social recreation carrying capacity is the estimated maximum number of groups of people who could recreate in an area and still have a specified type of recreation experience.

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Recreation Opportunity Spectrum (ROS)	A system for planning and managing resources that categorizes recreation opportunities into seven classes. Each class defines the degree to which certain recreation experience needs are met. Classes are based on the extent to which the natural environment has been modified, the type of facilities provided, the degree of outdoor skills needed to enjoy the area, and the relative density of recreation use.
Recreation Places	Identified geographical areas having one or more physical characteristics particularly attractive to recreationists. They may be beaches, streamsides or roadside areas, trail corridors, hunting areas near lakeshores.
Recreation Sites	A specific site and/or facility occurring within a recreation place. Some examples of recreation sites are: recreation cabins, trailheads, picnic areas, and wildlife viewing blinds.
Resident Fish	Fish that are not anadromous and that reside in fresh water on a permanent basis. Resident fish include cutthroat trout and arctic grayling.
Riparian Management Area	The area including water, land, and plants adjacent to perennial streams, lakes, and other bodies of water that is managed for the inherent qualities of the riparian ecosystem.
Roadless Area	An area of undeveloped public land identified in the roadless area inventory of the Forest Plan within which there are no improved roads maintained for travel by means of motorized vehicles intended for highway use.
Scoping Process	Early and open communication with the public used to determine the scope and significance of a proposed action, what level of analysis is required, what information is needed, and what level of public participation is appropriate. Scoping focuses on the issues surrounding the proposed action and the range of actions, alternatives, and impacts to be considered in an EA or EIS.
Sensitive Species	Animal and plant species identified by the Forest Service Regional Forester as potentially susceptible or vulnerable to activity impacts or habitat alterations and, therefore, in need of special considerations during land management activity planning.
Shoreline Zone	The area approximately one-half mile inland from mean high tide line.
Significant Issue	Under NEPA, refers to issues that are used to formulate alternatives, prescribe mitigation measures, or analyze environmental effects. Issues are ‘significant’ because of the extent of their geographic distributions, the duration of their effects, or the intensity of interest or resource conflict. ‘Significantly’ requires considerations of both context and intensity, as developed in the CEQ regulations, sec. 1508.27.
Special Interest Area	A designation for an area possessing unique or unusual scenic, historical, prehistoric, scientific, or other characteristics.

Spring Season	For Alternatives 1-5: April 20 – May 31 For Alternative 5a: April 25 - May 20
Stand	A group of trees occupying a specific area and sufficiently uniform in composition, age arrangement, and condition as to be distinguishable from the forest in adjoining areas.
Stream Class	<p>A way to categorize stream channels based on their fish production values. Also known as Aquatic Habitat Management Unit (AHMU) Class. There are four stream classes defined by the Forest Plan. They are:</p> <p><i>Class I</i> Streams and lakes with anadromous or adfluvial fish habitat; or high quality resident fish waters listed in Appendix 68.1, Region 10 Aquatic Habitat Management Handbook (FSH 2609.24), June 1986; or habitat above fish migration barriers known to be reasonable enhancement opportunities for anadromous fish.</p> <p><i>Class II</i> Streams and lakes with resident fish populations and generally steep (6–15 percent) gradient (can also include streams from 0–5 percent gradient) where no anadromous fish occur, and otherwise not meeting Class I criteria. The fish populations have limited fisheries values and generally occur upstream of migration barriers, or the streams have other habitat features that preclude anadromous fish use.</p> <p><i>Class III</i> Perennial and intermittent streams with no fish populations but which have sufficient flow or transport sediment and debris to have an immediate influence on downstream water quality or fish habitat capability. These streams generally have bankfull widths greater than five feet and are highly incised into the surrounding hillslope.</p> <p><i>Class IV</i> Intermittent, ephemeral, and small perennial channels with insufficient flow or sediment transport capabilities to have an immediate influence on downstream water quality or fish habitat capability. These streams generally are shallowly incised into the surrounding hillslope.</p>
Structural Diversity	The diversity of forest structure, both vertically and horizontally, which provides for variety of forest habitats such as logs and multi-layered forest canopy for plants and animals.
Subspecies	An aggregate of similar populations of a species generally inhabiting a geographic subdivision of the range of the species and differing taxonomically (for example, different size or color) from other populations of the species.
Summer Season	For Alternatives 1-5: June 1 – September 14 For Alternative 5a: May 21 – September 14
Sustained Yield	The amount of renewable resources that can be produced continuously at a given intensity of management.

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Threatened Species	Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range and that has been designated in the <i>Federal Register</i> by the Secretary of the Interior as a threatened species under the Endangered Species Act.
Tiering	Elimination of repetitive discussions of the same issue by incorporating by reference the general discussion in an environmental impact statement of broader scope; for example, this EIS is tiered to the Forest Plan EIS.
Tongass Resource Use Cooperative Survey (TRUCS)	A study done to gather information on subsistence uses of the Tongass National Forest.
Transporter	A business that only provides point-to-point transportation for clients. Transporters do not usually require a permit to transport unguided visitors to the national forest.
Use Area	Distinct geographic area used in this analysis as the basis for defining and managing recreation use. Use Areas are subdivisions of Guide Use Areas used by the Alaska Department of Fish and Game to manage commercial big game guiding. Use Areas provide distinct geographical areas at a size that allows meaningful recreation management for specific areas of the national forest.
Value Comparison Unit (VCU)	A distinct geographic area that generally encompasses a drainage basin containing one or more large stream systems. Boundaries usually follow easily recognizable watershed divides. These units were established in the Forest Plan to provide a common set of areas for which resource inventories could be conducted and resource value interpretations made.
Viable Population	Fish or wildlife populations that have the estimated number and distribution of reproductive individuals to ensure their continued existence and that are well distributed in the national forest.
Viewshed	A distinct area of land visible from identified travelways (boat route, recreation road, or trail) or recreation places (recreation cabin or anchorage).
Visual Quality Objective (VQO)	<p>A desired level of scenic quality and diversity of natural features based on physical and sociological characteristics of an area. Refers to the degree of acceptable alterations of the characteristic landscape.</p> <p><i>Adopted VQO</i> - The VQO to be achieved as a result of management direction identified in the approved Forest Plan. Adopted VQOs represent the visual resource objective for the Forest Land Management Plan period, normally 10 years (FSH 2309.22, R-10 Landscape Management Handbook).</p>

Watershed	That area that contributes water to a drainage or stream; portion of a forest in which all surface water drains to a common point. Can range from a few tens of acres that drain a single small intermittent stream to many thousands of acres for a stream that drains hundreds of connected intermittent and perennial streams.
Watershed Analysis	A systematic procedure for characterizing and evaluating ecological processes within a watershed, for use in ecosystem management and project planning. See Appendix J of the Tongass Land and Resource Management Plan.
Wetlands	Areas that are inundated by surface or ground water with a frequency sufficient, under normal circumstances, to support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include muskegs, marshes, bogs, sloughs, potholes, river overflows, mud flats, wet meadows, seeps, and springs.
Wild and Scenic River	River or section of a river so recommended or designated under the 1968 Wild and Scenic Rivers Act or by an act of the Legislature of the state or states through which the river flows.
Wilderness	Area designated under the 1964 Wilderness Act. Wilderness is defined as undeveloped federal land retaining its primeval character and influence without permanent improvements or human habitation. Wilderness areas are protected and managed to preserve their natural conditions. In Alaska, the Tongass Timber Reform Act of 1990 and ANILCA also have designated wilderness areas.
Wildlife Analysis Area (WAA)	A division of land used by the Alaska Department of Fish and Game for wildlife analysis.
Winter Range	An area, usually at lower elevations, used by big game during the winter months; usually smaller and better defined than summer ranges.

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References

The following list of references includes both literature cited in this EIS and other sources of information used in the Shoreline Outfitter/Guide analysis. Complete reference lists are included in individual resource reports that are on file in the Shoreline Outfitter/Guide planning record.

Agreement 02MU-111001-076, 2002. Second Amended Programmatic Agreement Among the USDA Forest Service, Alaska Region, the Advisory Council on Historic Preservation, and the Alaska State Historic Preservation Officer Regarding Heritage Resource Management on National Forests in the State of Alaska.

Alaska Board of Game [ABOG]. 2000. Southeast Alaska unit 4 brown bear management strategy – recommendations of a citizens and agency brown bear management advisory team. Douglas, AK. 90 pp.

Alaska Department of Fish and Game [ADF&G]. 2001. Run forecasts and harvest projections for 2001 Alaska salmon fisheries and review of the 2000 season: The short version. Regional Information Report No. 5J01-02. Juneau, AK: Alaska Department of Fish and Game.

Alaska Department of Fish and Game [ADF&G]. 2001a. Sport fishing emergency order No. 1-20-01. Sitka, AK: Alaska Department of Fish and Game.

Alaska Department of Fish and Game [ADF&G]. 2001b. Sport fishing emergency order No. 1-21-01. Sitka, AK: Alaska Department of Fish and Game.

Alaska Department of Fish and Game [ADF&G]. 2001c. Sport fishing news release No. 01-06-01. Sitka, AK: Alaska Department of Fish and Game.

Alaska Department of Fish and Game [ADF&G]. 2001d. Southeast Alaska sport fishing regulations summary. Juneau, AK: Alaska Department of Fish and Game.

Alaska Department of Fish and Game [ADF&G]. 2000. Alaska hunting regulations, No. 41. Effective 1 July 2000–30 June 2001. Juneau, AK: Alaska Board of Game. 120 pp.

Alaska Department of Fish and Game [ADF&G]. 2000a. Brown bear. Hicks, M.V., editor. Federal aid in wildlife restoration; annual performance report, survey-inventory activities 1 July 1999–30 June 2000. Douglas, AK: Division of Wildlife Conservation.

Alaska Department of Fish and Game [ADF&G]. 2000b. Sport fishing emergency order No. 1-23-00. Sitka, AK: Alaska Department of Fish and Game.

Alaska Department of Fish and Game [ADF&G]. 2000c. Sport fishing emergency order No. 1-32-00. Sitka, AK: Alaska Department of Fish and Game.

Alaska Department of Fish and Game [ADF&G]. 2000d. Sport fishing emergency order No. 1-10-00. Sitka, AK: Alaska Department of Fish and Game.

Alaska Department of Fish and Game [ADF&G]. 2000e. Sport fishing news release No. 1-23-00. Sitka, AK: Alaska Department of Fish and Game.

- Alaska Department of Fish and Game [ADF&G]. 2000f. Sport fishing news release No. 1-32-00. Sitka, AK: Alaska Department of Fish and Game.
- Alaska Department of Fish and Game [ADF&G]. 1999. Brown bear. Hicks, M.V. editor. Federal aid in wildlife restoration, management report, survey-inventory activities 1 July 1996–30 June 1998. Douglas, AK: Division of Wildlife Conservation.
- Alaska Department of Fish and Game [ADF&G]. 1999a. Sport fishing emergency order No. 1-08-99. Sitka, AK: Alaska Department of Fish and Game.
- Alaska Department of Fish and Game [ADF&G]. 1998. Brown bear. Hicks, M.V., editor. Federal aid in wildlife restoration, management report, survey-inventory activities 1 July 1994–30 June 1996. Douglas, AK: Division of Wildlife Conservation.
- Alaska Department of Fish and Game [ADF&G]. 1998a. Sport fishing emergency order No. 1-23-98. Sitka, AK: Alaska Department of Fish and Game.
- Alaska Department of Fish and Game [ADF&G]. Unpublished data. Southeast Alaska subsistence/personal use data from 1989 - 1999. Juneau, AK: Alaska Department of Fish and Game, Southeast Region.
- Alaska Department of Fish and Game [ADF&G]. Unpublished data. Southeast Alaska statewide sport fish harvest survey estimates data from 1997 - 1999. Juneau, AK: Alaska Department of Fish and Game, Southeast Region.
- Alaska Department of Fish and Game [ADF&G]. Unpublished data. Sport fish license sales data for communities within the analysis area during 1993 - 2000. Juneau, AK: Alaska Department of Fish and Game, Southeast Region.
- Alaska Department of Fish and Game [ADF&G]. Unpublished data. Commercial salmon harvest data for waters surrounding the project area during 1990 - 2000. Juneau, AK: Alaska Department of Fish and Game, Southeast Region.
- Alaska Division of Community and Business Development. 2001 (unpublished). 2000 Southeast Alaska Commercial Recreation Survey Preliminary Report. Alaska Division of Community and Business Development, Alaska State Government, Juneau, AK. Report and data on file with Guy Robertson, USDA Forest Service, Alaska Region (grobertson02@fs.fed.us).
- Allen, S.D.; Robertson, G.; Schaeffers, J. 1998. Economies in transition: An assessment of trends relevant to management of the Tongass National Forest. General Technical Report PNW-GTR-417. Portland, OR: USDA Forest Service, Pacific Northwest Research Station.
- Bald and Golden Eagle Protection Act. June 8, 1940. Public Law 76-567, Ch. 278, 54 Stat. 250, as amended; 16 U.S.C. 668(note), 668, 668a-d.

4 Lists

- Bittner, J.E. 2003. Letter of concurrence regarding Tongass National Forest determination of No Historic Properties Affected for the Shoreline Outfitter/Guide Analysis by Alaska State Historic Preservation Officer, Alaska Department of Natural Resources, Office of History and Archaeology.
- Bower, P, M. Gilliam and M. McCallum 2003. Heritage Resource Report for the Shoreline Outfitter/Guide EIS.
- Bowker, J.M. 2001. Outdoor Recreation by Alaskans: Projections for 2000-2020. General Technical Report PNW-GTR-527. Portland, OR: USDA Forest Service, Pacific Northwest Research Station.
- Brookover, T. 2001. Letter regarding steelhead conservation concerns by USDA Forest Service. Douglas, AK: Alaska Department of Fish and Game, Sport Fish Division.
- Brooks, D.; Haynes, R. In press. Recreation and tourism in south central Alaska: Synthesis of recent trends and prospects. General Technical Report PNW-GTR-511 Portland, OR: USDA Forest Service, Pacific Northwest Research Station.
- Cole, D.N. 1995. Disturbance of natural vegetation by camping: Experimental applications of low-level stress. *Environmental Management*. 19(3):405–416.
- Cole, D.N.; Trull, S.J.; 1992. Quantifying vegetation response to recreational disturbance in the North Cascades, Washington. *Northwest Science*. 66(4):229–236.
- Colt, S.; Martin, S.; Tomeo, M.; Twardock, P. In press. Recreation and tourism in south central Alaska: Patterns and prospects. Anchorage, AK: University of Alaska, Alaska Pacific University, Institute for Social and Economic Research.
- Ellis, R.J.; Calvin, N.I. 1995. Status of anchorage suitability for use by ecotourism charter boat operators and guides in Southeast Alaska. Prepared for Alaska Institute for Sustainable Recreation and Tourism, November 1995.
- Farrar, D.R. 1999. Genetic and morphological analyses of *Botrychium* plants collected in the vicinity of Yakutat, Alaska, in Summer 1998. Ames, IA: Iowa State University.
- Farrar, D.R. 2000. A genetic assessment of the systematic relationships of western moonwort species (*Botrychium* subgenus *Botrychium*). Ames, IA: Iowa State University.
- Halupka, K.C.; Bryant, M.D.; Wilson, M.F.; Everest, F.H. 2000. Biological characteristics and population status of anadromous salmon in Southeast Alaska. General Technical Report PNW-GTR-468. Portland, OR: USDA Forest Service, Pacific Northwest Research Station.
- Hendee, J.; Stankey, G.; Lucas, R. 1990. Wilderness Management. Second edition. North American Press. 546pp.

- Horton, G.E. 1994. Effects of jet boats on salmonid reproduction in Alaskan streams. Masters thesis. Fairbanks, AK: University of Alaska. 79 pp.
- Howe, A.L.; Walker, R.J.; Olness, C.; Heineman, G.; Bingham, A.E. 1999. Harvest and catch in Alaska sport fisheries during 1998. Fishery Data Series No. 99-41. Juneau, AK: Alaska Department of Fish and Game. 210 pp.
- Jones, D.; Brookover, T. 2000. Southeast Alaska trout and steelhead management. Report to the Alaska Board of Fisheries. Douglas, AK: Alaska Department of Fish and Game, Division of Sport Fish.
- Joslin, G.; Youmans, H.; coordinators. 1999. Effects of recreation on Rocky Mountain wildlife: A review for Montana. Committee on Effects of Recreation on Wildlife, Montana Chapter of The Wildlife Society. 307 pp.
- Knudsen, E.E.; Steward, C.R.; MacDonald, D.D.; Williams, J.E.; Rieser, D.W., editors. 2000. Sustainable fisheries management: Pacific salmon. Boca Raton, FL: D.W. Lewis Publishers.
- Lipkin, R.; Murray, D. 1997. Alaska rare plant field guide. Washington, DC: U.S. Department of the Interior.
- Martin et al. 1995. Plant Association Management Guide. Juneau, AK: Tongass National Forest.
- McDowell Group. 2000. The economic impacts of the cruise ship industry in Southeast Alaska. Prepared for Southeast Conference, October 2000. Juneau, AK: McDowell Group.
- Paustian, S.; et al. 1992. Channel type users guide, Tongass National Forest, Southeast Alaska. R10-TP-26. Juneau, AK: USDA Forest Service, Region 10.
- Roberts, C.B.; White, R.G. 1992. Effects of angler wading on survival of trout eggs and pre-emergent fry. North American Journal of Fisheries Management 12:450-459.
- Schroeder, R.; Cerveney, L.; Robertson, G. In press. Tourism growth in Southeast Alaska: Trends, projections, and issues. General Technical Report PNW-GTR. Portland, OR: USDA Forest Service, Pacific Northwest Research Station.
- Shelby, B.; Heberlein, T.A. 1986. Carrying capacity in recreation settings. Corvallis, OR: Oregon State University Press.
- Shumway, D.L.; Warren, C.E.; Doudoroff, P. 1964. Influence of oxygen concentration and water movement on the growth of steelhead trout and coho salmon embryos. Transactions of the American Fisheries Society 93:342-356.
- Southeast Alaska Marketing Council. 1988. Southeast Alaska Pleasure Visitor Research Program. Summer 1988. 183pp.
- Stensvold, M.C. 1994. A working guide to the sensitive plants of the Alaska Region. Sitka, AK: USDA Forest Service.

4 Lists

- U.S. Department of Agriculture [USDA], Forest Service. Undated. The ROS users guide.
- U.S. Department of Agriculture [USDA], Forest Service. 1986. ROS book. USDA Forest Service.
- U.S. Department of Agriculture [USDA], Forest Service. 1991. Alaska Region trails construction and maintenance guide. RT10-MB-158. Juneau, AK: USDA Forest Service.
- U.S. Department of Agriculture [USDA], Forest Service. 1994. Lichens of Southeast Alaska, an inventory. R10-TB-45. Juneau, AK: USDA Forest Service. 143 pp.
- U.S. Department of Agriculture [USDA], Forest Service. 1995. Anadromous fish habitat assessment report to Congress. R10-MB-279. Juneau, AK: USDA Forest Service, Pacific Northwest Research Station and Region 10.
- U.S. Department of Agriculture [USDA], Forest Service. 1997. Tongass Land Management Plan Revision Final Environmental Impact Statement. January 1997. Doc. No. R10-MB-338b. Juneau, AK: USDA Forest Service.
- U.S. Department of Agriculture [USDA], Forest Service. 1997a. Tongass Land Management Plan Revision Record of Decision. May 1997. Doc. No. R10-MB-338a. Juneau, AK: USDA Forest Service.
- U.S. Department of Agriculture [USDA], Forest Service. 1997b. Land and Resource Management Plan, Tongass National Forest. Doc. No. R10-MB-338dd. Juneau, AK: USDA Forest Service.
- U.S. Department of Agriculture [USDA], Forest Service. 1998. Unpublished. Tongass National Forest, Chatham Area, Salt Water Shoreline-Based Recreation Carrying Capacity Analysis (Excluding Yakutat Ranger District), Marshall, M. and Humphrey, L. Sitka, AK: USDA Forest Service. 57 pp.
- U.S. Department of Agriculture [USDA], Forest Service. 2001. Unpublished. Shoreline-based recreation carrying capacity analysis for the Juneau, Sitka, Hoonah, and Admiralty Island National Monument Ranger Districts, Tongass National Forest, 2001, Dalrymple, R., editor. Unpublished report available at the Tongass National Forest Supervisors Office, Sitka, AK.
- U.S. Department of Agriculture [USDA], Forest Service. 2002. Chugach Land Management Plan Revision Environmental Impact Statement. Juneau, AK: USDA Forest Service.
- U.S. Department of Agriculture [USDA], Forest Service. 2004. Master Memorandum of Understanding between United States Department of Agriculture Forest Service, Alaska Region and Alaska Department of Fish and Game. Doc. No. 04MU-111001-024. Juneau, AK: USDA Forest Service, Regional Office.

Lists 4

- U.S. Department of Commerce [DOC], National Marine Fisheries Service [NMFS]. 2001. Northern Southeast Alaska 1997 harbor seal haul-out locations. Withrow, D., Leader, Alaska Harbor Seal Task Force. Excel spreadsheet. Seattle, WA: DOC National Marine Fisheries Service. 7 pp.
- U.S. Department of Commerce [DOC], National Marine Fisheries Service [NMFS]. Not dated. Alaska marine mammal viewing guidelines—protected resources. Brochure. Juneau, AK: DOC, National Marine Fisheries Service.
- U.S. Department of the Interior [USDI], Fish and Wildlife Service. 2001. Subsistence management regulations for the harvest of wildlife on federal public lands in Alaska. Anchorage, AK: USDI, Fish and Wildlife Service, Office of Subsistence Management.
- U.S. Department of the Interior [USDI], Fish and Wildlife Service. 1990. Interagency agreement between the USDI Fish and Wildlife Service, Alaska Region, and the USDA Forest Service, Alaska Region. Doc. No. 89-010. USDI, Fish and Wildlife Service.
- Van Alen, B. 2000. Status and stewardship of salmon stock in Southeast Alaska. In: Sustainable fisheries management: Pacific salmon, Knudsen, E. E. et al., editors. Boca Raton, Florida: Lewis Publishers.
- Van Dyke, C., Christensen, Robert. 2003. Human and brown bear use of Eva Creek watershed: a cooperative study. Interim Summary Report, January 2003. 3 pp.

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List of Final EIS Recipients

The following is a list of agencies, organizations, and persons to whom the Shoreline Outfitter/Guide Final Environmental Impact Statement was sent.

Agencies

Advisory Council on Historical Preservation
Alaska Board of Game
Alaska Department of Environmental Conservation
Alaska Department of Fish and Game, Division of Fish and Wildlife Protection
Alaska Department of Fish and Game, Division of Habitat and Restoration
Alaska Department of Fish and Game, Division of Sportfish
Alaska Department of Fish and Game, Division of Subsistence
Alaska Department of Natural Resources
Alaska Office of the Governor, Division of Governmental Coordination
Alaska State Historical Preservation Office
Ministry of Competition, Science and Enterprise
National Oceanic and Atmospheric Administration, Alaska Regional Office
U.S. Army Corps of Engineers
U.S. Army, Engineer District
U.S. Coast Guard, 17th Coast Guard District
U.S. Coast Guard, Marine Environment & Protection Division
U.S. Department of Agriculture, APHIS PPD/EAD
U.S. Department of Agriculture, National Agricultural Library
U.S. Department of Agriculture, Natural Resources Conservation Service
U.S. Department of Agriculture, Office of Civil Rights
U.S. Department of Agriculture, Forest Service, Admiralty National Monument
U.S. Department of Agriculture, Forest Service, Alaska Regional Office
U.S. Department of Agriculture, Forest Service, Chugach National Forest
U.S. Department of Agriculture, Forest Service, Craig Ranger District
U.S. Department of Agriculture, Forest Service, Hoonah Ranger District
U.S. Department of Agriculture, Forest Service, Juneau Ranger District
U.S. Department of Agriculture, Forest Service, Ketchikan Supervisor's Office
U.S. Department of Agriculture, Forest Service, Petersburg Supervisor's Office
U.S. Department of Agriculture, Forest Service, PNW Research Station
U.S. Department of Agriculture, Forest Service, Sitka Ranger District
U.S. Department of Agriculture, Forest Service, Sitka Supervisor's Office
U.S. Department of Commerce, National Marine Fisheries Service
U.S. Department of Energy, Office of Environmental Compliance
U.S. Department of Interior, Bureau of Land Management, Alaska State Office
U.S. Department of Interior, National Park Service, Alaska Regional Office
U.S. Department of Interior, National Park Service, Glacier Bay National Park
U.S. Department of Interior, Office of Environmental Policy and Compliance
U.S. Department of Transportation, Environmental Division
U.S. Department of Transportation, Federal Aviation Administration
U.S. Department of Transportation, Federal Highway Administration
U.S. Department of Transportation, Federal Railroad Administration
U.S. Environmental Protection Agency, EIS Review
U.S. Environmental Protection Agency, Office of Federal Activities
U.S. Environmental Protection Agency, Region 10

U.S. Fish and Wildlife Service
U.S. Navy, Environmental Protection Division
U.S. Navy, Naval Oceanography Division

Libraries

Craig Public Library
Douglas Public Library
Elfin Cove Public Library
Gustavus Public Library
Haines Public Library
Hollis Public Library
Hyder Public Library
Hoonah Public Library
Juneau Public Library
Kake Community Library
Kasaan Community Library
Ketchikan Public Library
Klawock Public Library
Perlican Public Library
Petersburg Public Library
Sitka Public Library
Skagway Public Library
Tenakee Springs Public Library
Thorne Bay Public Library
Wrangell Public Library

Media

Juneau Empire
KTOO

Raven Radio
KFSK

Organizations and Businesses

Adams Alaska Safari
Admiralty Island Bear Association
Admiralty Island Sightseeing
Admiralty Tours
Admiralty Wilderness Adventures
Adventure Sports, Inc.
Alaska Angling
Alaska Charter Service
Alaska Coastal Adventure Charters
Alaska Coastal Outfitters
Alaska Cross Country Guiding
Alaska Discovery Wilderness Expeditions
Alaska Discovery, Inc.
Alaska Fish Tales
Alaska Fly'N'Fish Charters
Alaska Guide Service
Alaska Native Tours
Alaska on the Home Shore
Alaska Outdoor Adventures
Alaska Outdoor Recreation Services
Alaska Paddle Sports

Alaska Passages
Alaska Peak and Seas
Alaska Professional Hunters Assoc.
Alaska Research Voyages
Alaska Seair Adventures
Alaska Sightseeing
Alaska Travel Adventures
Alaska Travel Business Association
Alaska Tugboat Charters
Alaska Up Close
Alaska Vistas
Alaska Water Charters
Alaska Waters, Inc.
Alaska Wilderness Recreation & Tourism Recreation
Alaska Wilderness Recreation and Tourism Association
Alaska Yacht Charters
Alaskan Outback Adventures
All Aboard Yacht Charters
Alpine Guide Service
Anahootz Alaskan Adventure

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Anahootz Guiding Co.	Equinox Wilderness Expeditions
Angling Unlimited	ERA Helicopters, Inc.
Aqua Sports Enterprises	Experience Alaska's Southeast
Archipelago Kayaking Adventures	Eyak Adventures
Arrowhead Transfer Inc.	F/V I Gotta
Auk Ta Shaa Discovery	Federal Subsistence Board, Southeast
AWRTA	Alaska Regional Advisory
Baranof Expeditions	Council
Baranof Wilderness Lodge and	Fish Doctors LLC
Beyond Boundaries Expeditions	Fish Like Me Lodge and Charters
Bay View	Fishing Bear Charters
Bear Creek Outfitters	Flywater Adventures
Bluewater Adventures	Forbes Marine Service
Brabazon Expedition	Forest Conservation Council
Breakaway Adventures	Fossman Guiding & Outfitting
Bud's Guiding Service	Foster Wheeler Environmental
C.A.R.E.	Friends of Admiralty Island
Cascadia Wildlands Project	Friends of Berners Bay
CEO Expedition	Gastineau Guides, Inc.
Chatham Cannery Ltd.	Glacier Bay Adventures
Chichagof Charters	Glacier Bay Country Inn
Chichagof Conservation Council	Glacier Bay Park Concessions, Inc.
Citizen's Advisory Commission on	Glacier Bay Tours/LO
Federal Areas	Glacier Bear Lodge
Cloudberry Adventures LTD	Glacier Guides, Inc.
Coastal Helicopters, Inc.	Goldbelt Corp.
Coastal Wilderness Charters	Goldbelt Tours
Cove Lodge	Great Chase Charters
Crew International Tours	Greatland Guides
Cross Sound Lodge	Greg Cook, Attorney at Law
Cruise West	H.I.C. Tours
Cycle Alaska	Harbor Mountain Tours
Dave Duncan & Sons Inc.	Hawkeye Stages & Tours
David Benitz, Big Game Guide	Hook & Eye Charters
Deishu Expeditions	Howard Charters
Dennis Rogers, Outfitter/Guide	Icy Strait Adventures
Destination Wilderness	Icy Strait Fish & Game Advisory
Discovery Foundation	Comm.
Discovery Shipping, Inc.	Inner Harbor Lodge
Dolphin Charters	Inside Passage Charters, Inc.
Dolphin Jet Boat Tours	Inside Passages
Duen Sailing Adventures	Isand Waterways
Eagle's Nest Charters	J.& L. Gifts & Antiques
Earthjustice Legal Defense Fund	Janaggen Touring & Guiding
Echo Ranch Bible Camp	Jungles, Deserts & Mountains
Ecology and Environment	Kenneth Schoonover, Big Game
Economic Development Committee	Guide
Elfin Cove Lodge	Killisnoo Wood and Lumber
Elfin Cove Non-Profit Corp.	Kings Run Charters
Ellis Inc.	Kootznoowoo Corporation, Inc.

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L&M Charters	Riddell and Williams
Landmark Tree Project	Rocky Pass Resort
Last Frontier Tours	Ron's Alaska Charters
Laughing Raven Charters	Ryman's Italio Sport Camp
LaVern Beier, Big Game Guide	SE AK Ocean Adventures
Leonard's Landing Lodge	SE Alaska Cruises, Inc
Lindblad Special Expeditions	Sea Mist Charters
Lisianski Inlet Lodge/Charters	Seahook Charters
Longacre Expeditions	Sealaska Corporation
Lower Chatham Conservation Society	Sealaska Cruises Inc.
Lynn Canal Conservation, Inc.	SEAWEED
Maple Leaf Charters	Seawind Cruises
Meadfield Consulting, Inc.,	SeaWolf Adventures
Midnight Sun Charters	See Alaska Tour & Charters
Mike Vanning, Big Game Guide	Seminars Afloat
Nahanni River Adventures, Ltd.	Shearwater Charters
National Audubon Society	Shee Atika Inc.
National Outdoor Leadership School	Sheinberg Associates
Nine Lives Charters	Sheldon Jackson College
NOLS	Shelter Cove Publishing
Norris Charters	Shelter Island Homeowner's Association
North Alaska Expeditions	Shelter Island Neighborhood Association
Northern Outdoor Adventures	Shoreline Charters
Northern Star Charters	Sierra Club
Northstar Trekking	Silver Wind Charters
Northwestern University	Sitka Conservation Society
Norton Outfitters	Sitka Sportsman
Nunatak Kennels, Inc.	Sitka Tribal Tours
Otter Cove Bed and Breakfast	Skaflestad Guiding
Out of Bounds, Inc.	Snoozin Moose Guide Service
OVK	South Passage Outfitters
Pacific Catalyst	Southeast Alaska Conservation Council
Packer Expeditions	Southeast Alaska Flyfishing
Palco Charters	Southeast Alaska Guides Association
Parker Guide Service	Southeast Alaska Guiding
Peterson's Guide and Charter	Southeast Alaska Tourism Council
Pettijohn & Sons	Southeast Conference
Port Armstrong Hatchery	Southeast Guide Service
Port Conclusion	SouthEast Hunts
PTS Tours	Spirit Walker Expeditions
Pybus Point Lodge	State and Private Forestry
Quyana Marine	Stickeen Wilderness Adventures
R. Smith, Big Game Guide	Stikine Jet Boat Association
Rain Country Transport	Stikine River Song
Rain Walker Expeditions	Stories & Legends
Rainforest Guide Service	T. Smith, Big Game Guide
Raven Charters	Taku Conservation Society
Raven's Fire, Inc.	
Raven's Way/S.E.A.R.H.C.	
Real Alaska Adventures, Ltd.	

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Temsco Helicopters, Inc.	University of Alaska, Sitka Campus
Tenacious Charters	Whaler's Cove Lodge
Tenakee Hot Springs Lodge	Wild and Scenic Rivers Program
Territorial Sportsman	Wild Rockies Field Institute
Thayer Lake Lodge	Wilderness Enterprises
The Boat Company	Wilderness Ventures
The Charter Company	Wind Over Mountain
The McIntosh Foundation	Windham Bay Lodge
Timber Wolf Charters	Wolf Track Expeditions
Tok River Outfitters	Womens Flyfishing
Tongass Kayak Adventures	Wrangell Chamber of Commerce
Tongass Outdoor Adventure Center	Wrangell Cooperative Association
Tourism Advisory Committee	Wright Tours
Tourism Working Group	Yakutat Bay & River Charters
TRI Bed & Breakfast of Glacier Bay	Young's Fishing Service
Trout Unlimited	

Public Officials, Cities, and Federally Recognized Tribes

Alaska Native Brotherhood
 Angoon Community Association
 Angoon Fish and Game Advisory Committee
 Angoon Tlingit and Haida Community Council
 Aukquan Traditional Council
 Central Council of Tlingit and Haida Indian Tribes of Alaska
 Chilkat Indian Village
 Chilkoot Indian Association
 City and Borough of Sitka
 City of Angoon
 City of Hoonah
 City of Kake
 City of Pelican
 City of Port Alexander
 City of Wrangell
 Douglas Indian Association
 Elfin Cove Fish and Game Advisory Committee
 Gustavus Community Association
 Haines Tlingit and Haida Community Council
 Hoonah Indian Association
 Hoonah Tlingit and Haida Community Council
 Hoonah Traditional Tribal Council of Elders
 Huna Totem Corporation
 Juneau TandH Community Council
 Juneau/Douglas Fish and Game Advisory Committee
 Kake Fire Dept
 Kake Fish and Game Advisory Committee
 Kake Tribal Corporation
 Klukwan Tlingit and Haida Community Council
 Klukwan, Incorporated
 Organized Village of Kake
 Parks and Recreation, CBJ

Pelican Tlingit and Haida Community Council
 Petersburg Indian Association
 Port Alexander Fish and Game Advisory Committee
 Sealaska Heritage Foundation
 Sitka Fish and Game Advisory Committee
 Sitka Tribe of Alaska
 Skagway Tribal Association
 Skaqua Traditional Council
 Tenakee Springs Fish and Game Advisory Committee
 Tenakee Springs Indian Community
 Tenakee Springs, Shelly Wilson, ex officio Mayor
 United States Representative, Don Young
 United States Senator, Lisa Murkowski
 United States Senator, Ted Stevens

Individuals

Warren and Bea Albrecht	Judith Chandler-Hood
Sandi Anderson	Timothy Ciosek
Peter Andruss	Bob Clark
Bruce Baker	Lucas Clark
Jerry Barber	Helen Clough/Rollin Young
Kent Barkhau	Don Collinsworth
Beret Barnes	Nancy Collinsworth
Beret Barnes	Susan Corser
John Baston	Mary Coulter
Mike and Lori Bauer	Jai Crapell
Chris Beck	Robert Dalrymple
Joel Bennett	Lloyd Davis
Nancy Berland	Barbara Delong
Brian Bits	Mary Demmert
Jack Blackwell	Ronald M. Dippold
Art Bloom	Janet Doherty
Lindsey Bloom	Phil Downing
Arthur and Jo Bloom-Gladden	Janene Driscoll
Patty Borgeesen	Art Dunn
Eliazbeth Borson	Jan Eagle
Nathan Borson	Larry Edwards
Judy Brakel	Bill Ekshordl
William Brent	Ward Eldridge
Susan Brook	Brooke Elgie
Hans Buchholdt	Bob Ellis
Ralph Burnett	Lind Fabrello
Dave Button	Johanna Fagen
Peter Butz	George Figdor
Gary Carlson	Bob Fraker
Norm Carson	Clay and Anissa Berry Frick
Jason and Dordy Carter	Richard W. George
Preston Caven	Debra Rose Gifford
Robert Chadwick	Randy Gluth
Charles L. Chandler	Rich Gordon
Darrell Chandler	Kezia Graham

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Gary Gray
Phillip Gray
Dennis Hams
Dave Hanna
Dave Hardy
Dennis Harms
Tuck Harry
Karla Hart
Shannon Haugland
Kim and Melanie Heacox
Mary Hervin
Royal T. Hill
Bob Hinman
R. Hoagland
Frank Holman
Guy Hoppen
Chris Howard
Neil Huddleston
Frank Hughes
Marlene Hughes
Scott Hursey
Rachel Israel
Kurt Iverson
Hank Jack
Walter Jack
Lisa Jacobson-Kelly
George and Lynne Jensen
Floyd and Jennie Jim
Frank and Pauline Jim
Irene Jimmy
Amy Johnson
Bob Johnson
Karen Johnson
Loyal Johnson
Moses Johnson
Paul Johnson
Haden and Bonnie Kaden
Jim Keeling
Gretchen Keiser
Molly Kemp
Kerry Kirkpatrick
Nikki Koehler
Nellie Kookesh
Harvey and Ann Kortman
Joe Kulanik
Mark Laker
Aurah Landau
John Latham
Len Laurence
Stephen Lee

Bud Lehnhausen
Hank Lentfer
Bob Leshner
Hank Leutter
Joyce Levine
Roger Lewis
Steve Lewis
Cindy Longstretch
Mary Jo Lord-Wild
Jodi Lozori
Richard Lundahl
Judy MacDonald
Joseph Manga
Debbie Manion
Ken Marchbanks
Joanna Markell
Wade P. Martin
Mike and Mim (Winter) McConnell
Frank D. Merritt
Kenny Meserve
KJ Metcalf
Ben Mitchell
Dan Muller
The Mulligan Family
John Murray
Michael Murray
Rachael and Steve Myron-Lewis
Luke Nelson
Melanie Nelson
Richard Nelson
Kim Ney
Therese Nicol
Nick Olmsted
Jack Ozment
William H. Paddock
Beverly and Bill Patch
Arlen Pearsall
Warren Pellett
Beth Pendleton
John Peterson
Reug Peterson
Marvin Proctor
Rick Purves
Rahul Ray
Marty Raymond
Kenneth Rear
Hugh Reilly
Jerry Reinwand
Jean and Marty Remund
Wayne Roberts

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Frank Rogers
Cyndi Roman
Mark Rorick
Jimmie C. Rosenbruch
Donald Russo
S. Rutter
Dan Sailor
Julie Schaefer
Lynn Schooler
Sue Schrader
Susan Schrader
Mark Schwan
Lynn Schweikart
Florian Sever
Greg Seymour
Brad Shaffer
Gene Shanks
Elizabeth Shaw
Bob Silverman
Jeff Sloss
Glen Smith
Linda Speerstra
Deb Spencer
Lisa Speno
Brent Stedman
Karen Stepaneako
David Steward
Edward Storck
Eric Stromme
Pat Taylor
Cory Thole
Gary Timothy
Floyd Tomkins
Mike Van Note
Stephen VanDerhoff
Victor Voit
Michael Ward
Kennth Wheeler
Ted Whited
Maggie Wigen
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Tabby Williams
R. Wilson
Rita Wilson
Dina Wisenbaugh
Vicki and John Wisenbaugh
Virgina Wisenbaugh
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Jacob Yearty
Gayle Young
J. Young
S. Youngberg
Deborah Younger
Lance Youngquist
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Chapter 3

Key Terms

Carrying capacity (recreation) — The estimated maximum number of groups of people who could recreate in an area and still have a specified type of recreation experience.

Commercial use — Any use of the national forest for which a fee is charged by an outfitter/guide.

Cumulative effects — The impacts on the environment resulting from the addition of the incremental impacts of past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such actions.

Direct effects — Environmental effects that occur at the same time and place as the initial cause or action.

Enclave — Area where large groups can occur on a regular basis throughout the season.

Fifteen-Percent Area — Places where large groups can occur only on an occasional basis, for less than 15 percent of the primary use season.

Indirect effects — Effects that occur later in time or are spatially removed from the activity but would be significant in the foreseeable future.

Group — A group consists of one or more individuals recreating together as a social unit. Groups are used as the basic unit in this analysis

Group days — A measurement of recreation use by groups using the national forest on a daily basis

Large group — Group made up of a number of people that exceeds the general maximum group size for a specified type of recreation experience in the ROS. Large group size varies by LUD and ROS. For large group areas in this EIS, large groups are defined as 21-75 people.

Management Indicator Species (MIS) — Vertebrate or invertebrate wildlife species whose response to land management activities can be used to predict the likely response of other species with similar habitat requirements.

Mitigation — Measures designed to counteract or reduce environmental impacts.

Recreation Opportunity Spectrum (ROS) — A system for planning and managing recreation that categorizes recreation opportunities into seven classes.

Shoreline zone — The analysis area extending inland approximately one-half mile from mean high tide.

Use Area — Distinct geographic areas used in the analysis as the basis for defining and managing recreation use.

Chapter 3

Affected Environment and Environmental Consequences

Introduction

Overview

This chapter provides information concerning the existing environment of the Shoreline Outfitter/Guide analysis area, and potential consequences for that environment as a result of this project. Also presented is the scientific and analytical basis for the comparison of alternatives presented in Chapter 2. Each resource potentially affected by the proposed action or other alternatives is described by its current condition and uses. Other findings required by policy and laws are included at the end of the chapter.

The chapter begins with a description of the affected environment and environmental effects on the recreation resource associated with the three significant issues in the Shoreline Outfitter/Guide analysis area (see Chapter 1). Following the recreation section are discussions of socioeconomic considerations, Wilderness, and Wild and Scenic Rivers. The Other Environmental Considerations section discusses other resource concerns raised during scoping that the IDT found not to be significant issues as defined by NEPA. These other concerns include: (1) potential effects (environmental consequences) that are mitigated in the same way in all alternatives or (2) resources that are not significantly affected by any alternative.

For all resource areas under discussion, direct, indirect, and cumulative effects are disclosed. Effects are quantified where possible, and qualitative discussions are also included. Means by which potential adverse effects will be reduced or mitigated are described (see also Chapter 2, and Appendices A, B, and C).

Discussions of resources and potential effects are based on existing information included in the Forest Plan, other project environmental analyses, project-specific resource reports, agency and scientific studies, and related information. Where applicable, such information is briefly summarized and referenced to minimize duplication. The planning record for the Shoreline Outfitter/Guide EIS includes all project-specific information, including resource reports, documentation of field investigations, and information gathered from public meetings. The planning record is located at the Sitka Supervisor's Office, Sitka, Alaska, and is available for review during regular business hours. Information from the record is available upon request.

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Administrative Land Divisions

Use Areas are distinct geographic areas used in the analysis to define and manage recreation use.

The land within the Tongass National Forest has been divided in several different ways in order to better describe the different resources and facilitate systematic and consistent analysis. These divisions vary depending on the resource because the relationship of each resource to geographic conditions and zones varies.

Use Area

The Shoreline analysis area was divided into Use Areas because it is too large and complex to manage as one area. Use Areas are the key land divisions used in the Shoreline Outfitter/Guide EIS to define and manage recreation use. They are designed to provide distinct geographical areas at a size that allows meaningful recreation management. Recreation carrying capacity was determined for each Use Area, providing a consistent basis for permit administration and monitoring. Figure 1-1 in Chapter 1 shows the location of these Use Areas. These Use Areas are also subdivisions of Guide Use Areas used by the Alaska Department of Fish and Game to manage commercial big game guiding.

Land Use Designation (LUD)

The Forest Plan established Land Use Designations (LUD). Each LUD provides for a combination of activities, goals and objectives, and uses. There are 16 LUDs that apply to the Shoreline Outfitter/Guide analysis area. Standards and guidelines for these LUDs were used to determine recreation carrying capacity, group size, and resource protection measures. LUDs within the analysis area are discussed and displayed in Chapter 1 and Appendix E.

Value Comparison Unit (VCU)

Value Comparison Units are distinct geographic areas, each encompassing a drainage basin containing one or more large stream systems. Boundaries usually follow major watershed divides. The Shoreline Outfitter/Guide analysis area includes all or portions of more than 300 of the 926 VCUs on the Tongass National Forest. VCUs are used in wildlife and subsistence analysis.

Wildlife Analysis Area (WAA)

Wildlife Analysis Areas are land divisions used by the Alaska Department of Fish and Game for wildlife population analyses. Subsistence use is also compiled by WAA. The Shoreline Outfitter/Guide analysis area includes all or portions of approximately 75 WAAs.

Game Management Unit (GMU)

Game Management Units (GMUs) are land divisions delineated and used by the Alaska Department of Fish and Game to implement Alaska Board of Game hunting and trapping regulations such as seasons and bag limits. The Shoreline Outfitter/Guide analysis area includes all or portions of GMUs 1C, 1D, and 4.

Guide Use Area (GUA)

Guide Use Areas are land divisions originally delineated by the Alaska Board of Guides. Currently, the Alaska Department of Community and Economic Development, Division of Occupational Licensing, limits big game guides to using no more than three GUAs at one time. The Forest Service also considers GUAs in managing outfitter/guide activities on the national forest.

Analyzing Effects

Environmental consequences are the effects of implementing an alternative on the physical, biological, social, and economic environment. The Council on Environmental Quality (CEQ) regulations implementing the National Environmental Policy Act (NEPA) include a number of specific categories to use for the analysis of environmental consequences. Several categories are applicable to the analysis of the proposed project and alternatives and form the basis of much of the analysis.

Direct, Indirect, and Cumulative Effects

Direct environmental effects are those occurring at the same time and place as the initial cause or action. Indirect effects are those that occur later in time or are spatially removed from the activity but could be significant in the foreseeable future. Cumulative effects result from incremental effects of actions, when added to other past, present, and reasonably foreseeable future actions, regardless of which agency or person undertakes actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.

Effects may be beneficial or adverse. Many potentially adverse effects can be reduced through the design of the project or through remedial actions during project activities. Forest Plan standards and guidelines, Best Management Practices and mitigation measures are incorporated into this analysis. They would be implemented and enforced through administration of outfitter/guide permits and monitoring resource conditions to limit the extent, severity, and duration of resource effects.

Unavoidable Adverse Effects

Implementation of any action alternative may cause some adverse environmental effects that cannot be effectively mitigated or avoided. Unavoidable adverse effects often result from managing the land for one resource at the expense of the use or condition of other resources.

Short-term Use and Long-term Productivity

Under the Multiple-Use Sustained Yield Act, and the National Forest Management Act, all renewable resources are to be managed so that they are available for future generations. The allocation and permitting of a commercial outfitter/guide use is a short-term use of the forest resources. It is a low impact and short duration use that is compatible with sustainable ecosystem management. Long-term productivity is the capability of the land and resources to continue producing goods and services long after the project has been implemented. Consumptive recreation uses such as fishing, hunting, and berry picking can continue over time if the populations and long-term productivity of the land are maintained. Long-term productivity is maintained through the design of the alternatives and application of resource protection measures described in Chapters 2 and 3 and Appendix C.

Irreversible and Irretrievable Commitments

Irreversible commitments are decisions affecting non-renewable resources such as soils, wetlands, unroaded areas, and heritage resources. Such commitments are considered irreversible when the resource has deteriorated to the point that renewal can occur only over a great period of time, at great expense, or not at all. The destruction of an archaeological site is an example of an irreversible commitment. No irreversible effects are expected to occur as a result of this project.

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Irretrievable commitments represent opportunities foregone for the period during which resource use or production cannot be realized. Such decisions are reversible, but the production opportunities foregone are irretrievable. Recreation use from the Shoreline project will result in no irretrievable commitment of forest resources.

Available Resource Information

There is incomplete knowledge about many of the conditions and relationships of forest resources and social needs. Recreation management is a complex and developing science. Wildlife population dynamics and habitat relationships are not completely understood. Interactions of recreation opportunities, economic and social conditions, and the affected communities are the subject matter of a complex and evolving science. However, the basic data and central relationships are sufficiently well established for this analysis to adequately assess and disclose the possible adverse environmental consequences, and for the responsible official to make a reasoned choice among the alternatives.

The interdisciplinary team (IDT) examined existing data and relationships to estimate potential effects of the alternatives. The IDT concluded that any missing information or gaps in information could have added precision to the assessment of effects or relationships. However, the basic data and nature of relationships are sufficiently recognized; more information would unlikely reverse or nullify known information trends or relationships. Any new information could add precision, but would not be essential. The decision maker has ample background information pertaining to each alternative to make a reasoned choice.

Although there is not a lot of scientific research specifically related to commercial recreation and its social and environmental effects in southeast Alaska, there has been a good collection of environmental analysis in the past for commercial recreation use, recreation development, and similar actions. The Shoreline Outfitter/Guide analysis relied on the past 25 years of environmental analysis and outfitter/guide permit administration and the professional judgment of IDT specialists to build and support the assumptions used in this analysis.

The Forest Service has issued over 440 permits per year on the Tongass, of which approximately 290 are within the study area. Outfitter/guide use is regulated and monitored through the administration of these permits. The permit files are located at the authorizing office for each permit. These files were reviewed as part of this analysis and are incorporated by reference.

This analysis used recreation and resource information from the Tongass SEIS (2003), the Forest Plan, GIS inventory data, GIS models, field inventories and observations, Alaska Department of Fish and Game (ADF&G) population and harvest data, actual commercial use data, and related recreation tourism and socioeconomic data from other state and federal agencies. Professional judgment was used where reliable data and information were not available.

Discussion of Significant Issues

A significant issue provides the focus for one or more alternatives, can be used to compare alternatives, and is used to track environmental effects throughout the analysis. Significant issues were identified through scoping. Chapter 1 describes the issues and the process used to identify them.

Some measures are repeated for each issue to display the different perspectives unique to that issue.

After identifying significant issues and developing alternatives to respond to them, methods were determined to evaluate how each alternative would respond to the issues. Methods chosen were quantitative (where possible), predictable, responsive to the issue, and linked to cause-and-effect relationships. Significant issues within the scope of the project decision are:

- Availability of recreation opportunities for guided and unguided recreationists.
- Economic opportunities and potential impacts on commercial outfitter/guide businesses.
- Conflicts within the commercial recreation industry.

The issues are addressed in detail in the following sections: Recreation, Socioeconomics, Wilderness, and Wild and Scenic Rivers. Effects discussions focus on how each alternative responds to each significant issue. Some measures are repeated to display the different perspectives unique to each issue. The alternatives are rated against each other and the existing condition.

Recreation

Introduction

This analysis focuses on management of the recreation setting, by regulating the number of commercially guided groups using specific shoreline-based areas.

This section describes recreation use and corresponding environmental and social conditions, and the potential environmental effects of the alternatives relative to the significant issues and resources of concern. This introduction provides a brief discussion of the analytical basis for comparing the different alternatives proposed in Chapter 2. Further details on recreation management concepts are found in Appendix F.

The analysis area is managed for multiple uses including timber production, recreation and wilderness resources. The Forest Service plays an important role in the changing and diverse economic environment of Southeast Alaska.

Some forest management activities result in a product that is relatively easy to measure. For example, a timber sale will produce a specific amount of timber; the construction of a fish pass will allow fish to access a measurable area of new habitat. It is more difficult to quantify the products of this project, which seeks to manage or enhance a wildland recreation experience. People have a wide range of expectations and values, and they have many different definitions of a satisfying recreation experience.

The challenge for the Forest Service is to respond to the public's desires for various kinds of settings and access. The Forest Service manages its lands to provide the public with a variety of recreation opportunities. This can influence the recreation experience by (a) providing different settings for recreation, ranging from wilderness to fully accessible trails and campgrounds; and (b) providing different facilities, such as cabins, boat moorings or roads, that make an area more accessible. This analysis focuses on management of the recreation setting, by regulating the number of commercially guided groups using specific shoreline-based areas.

Our goal is to provide opportunities for quality recreation experiences sought by both guided and unguided users that will not adversely affect forest resources. This will

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be accomplished by managing the analysis area so that each Use Area conforms to the Recreation Opportunity Spectrum (ROS) class setting indicators stated in the Forest Plan.

The Forest Plan and the Recreation Opportunity Spectrum

The Forest Plan provides the management framework for the recreation resource. Recreation and tourism management goals for the Tongass National Forest were developed through scientific review and in response to public comment.

The Forest Plan divides land into a series of areas, each of which is described by a land use designation (LUD). Each LUD has a management prescription that includes goals, objectives, and a desired future condition. LUDs also include standards and guidelines for managing recreation and the other forest resources. See Chapter 1 of this EIS for a discussion of the Land Use Designations.

The Forest Plan assesses recreation and tourism resources by assigning a range of appropriate recreation settings for each LUD using the ROS. These classes cover the full range, or spectrum, of recreation opportunities. Each LUD may include more than one ROS class. The ROS classes, from least developed to most developed, are listed below.

- Primitive
- Semi-Primitive Non-motorized
- Semi-Primitive Motorized
- Roaded Natural
- Roaded Modified
- Rural
- Urban

The ROS is an inventory tool used to describe the existing condition of recreation opportunities on the national forest. Guidelines for each ROS class describe the physical, social, and managerial setting components that affect the kind of experience forest visitors may expect. ROS guidelines in the Forest Plan are used to guide management activities in order to maintain or attain a defined range of recreation opportunities. ROS classifications used in the Forest Plan by LUD are displayed in Appendix F, Table F-1.

For each ROS class, the Forest Plan identifies setting indicators that describe the class. The indicators are:

- visual quality,
- access,
- remoteness,
- visitor management,
- on-site recreation development,
- social encounters, and
- visitor impacts.

The standards and guidelines for ROS classes are found in Appendix F, Table F-2.

Recreation Carrying Capacity Analysis

The concept of recreation carrying capacity describes the number of recreation users that can be accommodated in a given area without loss to the quality of the natural environment and/or the visitor experience. The *Shoreline Based Recreation Carrying Capacity Analysis for the Admiralty Island National Monument, Hoonah, Juneau, and Sitka Ranger Districts 2001* (USDA Forest Service 2001), also called the *Shoreline RCC*, documents an analysis that assessed the recreation carrying capacity of the shoreline zone on the four ranger districts. For this analysis, the shoreline zone extends from mean high tide to approximately one-half mile inland.

Carrying capacity numbers were derived by determining the existing recreation experience; and applying the number of groups at one time within each specific Use Area, considering the ROS class standards for social encounters indicated in the Forest Plan, local anchorages and topographic features. This capacity is used as the basis for determining potential effects in this EIS.

Types of Recreation Carrying Capacity

The following four types of recreation carrying capacity were considered in the *Shoreline RCC*. The social carrying capacity was found to be most limiting and was used to develop the recreation carrying capacity. For further details on the types of carrying capacity in the analysis area, see Appendix F.

- Physical - The amount of recreation use that can physically occur in a defined space without regard to the quality of the experience.
- Facility - The amount of recreation use that can occur within the constraints of existing facilities and improvements intended for visitor needs, such as parking lots, trails, docks, restrooms, and developed campgrounds.
- Ecological - The amount of recreation use that can occur without creating unacceptable impacts on the ecosystem.
- Social - The amount of recreation use that can occur without impairing social experiences. Social carrying capacity is the level of use beyond which social impacts exceed acceptable levels specified by evaluative standards (Shelby and Heberlein 1986). These standards are developed by: 1) establishing a known relationship between use level or other management parameters and social impacts. 2) Agreement among relevant groups about the type of recreation experience to be provided. 3) Agreement among relevant groups about appropriate levels of social impact. These numbers are not absolutes, but are the product of value judgments and science (Hendee et al 1970). The social capacity numbers can change over time as values and expectations change.

LUD and ROS standards and guidelines developed in the Forest Plan establish a relationship between management parameters and social impacts. Public scoping for the Forest Plan was used to determine the recreation wants and needs of different users. This public input was the basis for the range of ROS opportunities provided by different Land Use Designations. The appropriate level of social impacts was addressed in the Forest Plan by assigning a specific range for the number of encounters and size of group to the ROS classification guidelines and outfitter/guide special use permit administration.

Group - one person

recreating alone, or
more than one person
recreating together.

Groups-at-one-time -

number of groups that
could recreate in a
specific area and still
maintain the expected
social setting identified
in the Forest Plan.

Group Days -

seasonal allocation
made for a particular
use area.

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Social carrying capacity was determined in terms of the daily number of groups in an area limited by the specified number of group encounters. Group encounters are an important part of the ROS classification used to define the expected recreation experience. The goal is to manage the area so that the number of group encounters per day is within Forest Plan ROS guidelines Table 3-1. These guidelines identify the number of encounters one may expect to experience in a day, maximum party size, and number of parties within sight or sound of dispersed campsites.

Three components are used in this analysis to manage social recreation carrying capacity for the analysis area: Use Areas, groups-at-one-time, and seasons of use.

Use Areas - The analysis area was subdivided into 38 Use Areas, 37 of which contain a shoreline zone and are included in this analysis. The other area contains the Juneau Icefields. See Figure 1-1 and Appendix A for the location and description of each Use Area.

Groups-at-one-time - The basic social recreation component for the carrying capacity assessment number of social encounters a group has while recreating is the basic social recreation component for the carrying capacity assessment. The *Shoreline RCC* defines the recreation carrying capacity in terms of group days. Recreation in the analysis area occurs primarily with groups of people rather than as individuals. Group Days are determined by establishing the number of groups that can be in an area at one time without exceeding the threshold for maximum encounters specified by the ROS class assigned to that Use Area. This threshold is established to insure that the range of recreation experiences will be consistent with management direction.

Group Days - “Group Days” is the total allocation assigned to a Use Area during a particular season. Group Days are determined by multiplying the Groups-At-One-Time by the number of days in that season.

Table 3-1. Forest Plan Guidelines for Numbers of Social Group Encounters Per Day by ROS Class

ROS Class	Number of Encounters/Group Size Limit	
	Non-Wilderness	Wilderness
Primitive	Less than 3/12	Less than 3/12
Semi-primitive	Less than 10*/12-20	Less than 6/12-20
Roaded Natural	Less than 20*/No limit	Not applicable/No limit
Roaded Modified	Less than 20*/No limit	Not applicable/No limit
Rural	No guideline/No limit	Not applicable/No limit
Urban	No guideline/No limit	Not applicable/No limit

*During at least 80% of the primary use season.

Encounters between individuals within a group are not counted because the people within the group typically choose to be with each other. Groups of people on boats traveling, sightseeing, fishing, or anchored on the saltwater were not considered to be national forest users for the purposes of this EIS and are not factored into the

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groups-at-one-time figure in the carrying capacity. Groups on the salt water at access points to the national forest were considered only in conjunction with their upland use. See Appendix F and the *Shoreline RCC* for more information on methodology and data sources.

Seasons

To better manage for the different activities and use levels occurring at different times of the year, recreation seasons were identified to provide a temporal measure for recreation management and use. The seasons of use evaluated in the FEIS are listed in Table 3-2.

Table 3-2. Dates and Number of Days of Seasonal Use

Season	Starting Date	Ending Date	Length in Days
Spring	April 20	May 31	42
Summer	June 1	September 14	106
Fall	September 15	October 31	47
Annual	April 25	October 15	195

The summer season is the busiest season of the year for both commercial and non-commercial recreation for most activities. Hunting primarily occurs in spring and fall seasons. The end of the spring season and the beginning of the fall season are known as ‘shoulders’ to the peak summer primary use season. Shoulder seasons are becoming increasingly busy for some activities, especially sightseeing. Because little or no commercial recreation use occurs during the winter season, no specific management allocations for the winter season are proposed in this analysis.

The following table displays the group days by alternative and by seasons as evaluated in the FEIS for commercial recreation use.

Table 3-3. Group Days by Alternative by Seasonal Allocation

Alternative	Spring Allocation	Summer Allocation	Fall Allocation	Total
1	0	0	0	0
2	1,693	12,588	1,894	16,175
3	8,463	21,359	9,475	39,297
4	1,202	3,722	1,135	6,059
5	1,995	10,737	4,798	17,530

Comments received on the Draft Shoreline EIS, included concerns about crowding during periods of brown bear hunting seasons (spring and fall seasons), as well as from other types of commercial uses wanting to expand services during the spring and the fall. Specific comments included several that thought the spring season in some Use Areas lasted too long as the brown bear hunting seasons ended weeks before the summer season identified in the Draft Shoreline EIS began.

In response to comments received on the Draft Shoreline EIS regarding the use of outfitter/guide data for only the 1999 operating season, the outfitter/guide data was updated to consider use information for the 1999 to 2001 operating seasons. After

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reviewing this new information it became evident that use by outfitter/guides may vary from the seasons as presented in Table 3-2. While these seasons would generally accommodate the use as proposed by alternatives, the actual use by the outfitter/guides may dictate an adjustment to what was proposed in the Draft Shoreline EIS. Following are changes to the seasons could be considered in a final decision for this document;

- Having the spring season begin on April 25 rather than on April 20 for all Use Areas.
- Having the fall season end on October 10 rather than on October 31 for all Use Areas.
- Having the spring season close either on May 20 or May 31 depending on the end of the brown bear season as identified by ADF&G for the specific Use Area.

These adjustments in seasons would address several comments to the Draft Shoreline EIS. First, the reduction of five days in the spring season and eleven days in the fall season would reduce the total number of commercial recreation group days available in each alternative. As there are no recommendations for allocating group days other than by season, there was a concern that group days would actually be used more towards the end of spring or the beginning of the fall causing more crowding in that part of the season.

Next, the recommendation to reduce the spring season from May 31st to May 20th also reduces the total number of group days for approximately 14 Use Areas. Reducing the number of group days in the spring season could further reduce the potential for crowding while also increasing the number of days available in the summer season. This action addresses other comments that requested an earlier start to the summer season to accommodate a growing clientele for remote nature tours and fishing.

If all seasonal adjustments were incorporated into all the alternatives then the following group days would likely apply:

Table 3-4. Alternatives with the Seasonal Adjustments

Alternative	Spring Allocation	Summer Allocation	Fall Allocation	Total	Total Change Group Days (-)
1	0	0	0	0	0
2	1,373	13,089	1,271	15,733	-1,161
3	6,879	22,512	6,372	35,763	-4,895
4	806	3,824	769	5,399	-793
5	1,631	11,242	3,228	16,101	-2,394

The reduction of group days would also be responsive to other comments who have concerns for subsistence or other uses of the forest in that there may be fewer people competing for resources overall during the early spring and late fall.

The May 20th and May 31st end of the spring season as proposed coincides with the end of the brown bear hunting seasons for Game Management Units 4, 1C, and 1D

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respectively. (Brown bear hunting ends in GMU-4 on May 20th and ends in GMU's 1C and 1D on May 31st.) There are concerns about crowding in some Use Areas in GMU-4 in several alternatives for several of the seasons. As noted, the adjustment in the seasons which results in the reduction of group days for commercial recreation use might reduce conflicts between outfitter/guide use and use by non guided groups.

The Use Areas affected by a change in the spring season end dates are shown below.

Table 3-5. Spring Season End Dates for Use Areas

May 20 (14 Use Areas)		May 31 (23 Use Areas)	
04-04A	Lake Eva, Rodman Bay	01-01	Skagway Area
04-04B	Kelp Bay	01-02	Haines Area
04-04C	Baranof Warm Springs	01-03	East Chilkats
04-05	SW Admiralty	01-04A	Berners Bay
04-06A	Pybus Bay	01-04B	North Juneau Coast
04-06B	Eliza Harbor	01-04C	Taku Inlet
04-07	Gambier Bay	01-04D	Slocum Inlet
04-08	NE Admiralty	01-05A	Taku Harbor
04-09	Seymour Canal	01-05B	Port Snettisham
04-10A	Greens Creek	01-05C	Windham Bay
04-10B	NW Admiralty	01-05D	Tracy Arm
04-11	Hoonah Area	01-05E	Fords Terror
04-12	Tenakee Inlet	04-01A	Gut Bay
04-13	Peril Strait	04-01B	Port Armstrong
		04-02A	Redoubt Lake
		04-02B	Whale Bay
		04-03	Sitka Area
		04-14	Slocum Arm
		04-15	West Chichagof
		04-16A	Point Adolphus
		04-16B	Mud Bay
		04-16C	Idaho Inlet
		04-16D	Port Althorp

Affected Environment

Communities

The Shoreline analysis area lies within a land of spectacular scenery and abundant wildlife. The 17-million-acre Tongass National Forest encompasses about 80 percent of the land in Southeast Alaska, including most of the coastal rainforest.

Twelve communities are found within the general project area: Juneau, Sitka, Baranof Warm Springs, Port Alexander, Tenakee Springs, Pelican, Elfin Cove, Gustavus, Angoon, Hoonah, Haines, and Skagway. The highest levels of recreation use are centered near these communities. The communities of Petersburg, Kupreanof, and Kake are just south of the project area, but do have some reliance on the project area for business, personal, and subsistence needs. Types of recreation include tourism (including cruise ships and historical and cultural tourism), guided fishing and hunting, wildlife viewing (including whale watching), and many others. Community profiles are described beginning on page 3-54.

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Recreation activities within and adjacent to the analysis area are strongly marine oriented.

Recreation in the Analysis Area

A thick, temperate rainforest dominates much of the analysis area. Rainfall ranges from 24 inches per year in Skagway to 72 inches in Juneau and more than 192 inches annually in Little Port Walter. Forested mountains rising from the saltwater provide unique and remote coastal recreation opportunities found in few areas in the world. Recreation enthusiasts are able to view a variety of natural landforms and wildlife such as glaciers, old-growth forests, humpback whales, spawning salmon, and bald eagles.

The large amount of land area in the Tongass National Forest provides a great diversity of recreation attractions and opportunities. Most of these recreation activities take place in, and depend on, settings that are primarily undeveloped and widely dispersed. Most of the area is wild and remote, with limited road access only locally available around the communities in the analysis area. Recreation facilities, primarily cabins and shelters, are limited. The analysis area is a place where people generally expect a remote and wildland experience. However, the surrounding saltwater, which is not managed by the Forest Service, allows for easy motorized boat and floatplane access for most of the analysis area.

For a display of the types and amount of different recreation opportunity settings available within the analysis area, see Tables 3-6 and 3-7 for the acres and miles of shoreline in each ROS classification; see Appendix A for further discussion on and descriptions of individual Use Areas.

Only recreation use that is occurring on National Forest is included in the estimate of use for this analysis, which does not include use on saltwater or private lands. Uses of upland National Forest land that require access through the shoreline zone are included in overall use estimates.

Recreation activities in the analysis area cover a broad spectrum of uses, from hunting and fishing to wildlife watching, photography, hiking, and kayaking. The recreation activities within and adjacent to the analysis area are strongly marine oriented, with the national forest providing the background for both land and marine-based recreation. Almost all recreation activities occurring on the national forest are within 1/4 to 1/2 mile of the saltwater shoreline, or up streams accessed from the shoreline. People use kayaks, small motorboats, sailboats, charter boats, floatplanes, state ferries, and cruise ships to sightsee and recreate.

Recreationists take advantage of mostly remote, dispersed, wild-land-oriented activities such as sightseeing, hiking, backcountry camping, nature viewing, and photography. Wildlife is abundant in the analysis area, and people often see wildlife such as bald eagles, brown and black bears, and humpback whales, in a natural setting. Forest visitors also come to view and photograph tidewater glaciers and other dramatic coastal landscapes

Hunting (both guided and unguided) is the predominant recreation activity occurring along shorelines in the spring and fall during brown bear and deer hunting seasons. Brown bear hunting occurs predominantly along the shoreline and for distances up streams, while deer hunting may occur anywhere inland. Because the spring and fall hunts are in the 'shoulder' seasons (rather than the peak summer season), the number of other non-hunting recreationists in spring and fall is less than during the summer season. Many people also hunt and fish, both for sport and for subsistence. Non-

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residents may visit the analysis area for the challenge of hunting bear, moose, and mountain goat, while many local residents count on the yearly hunting season to fill their freezers with deer or moose meat for the winter.

World-class sport fishing opportunities abound in both fresh and saltwater. Some people visit the Tongass specifically to experience salmon runs. Many local residents are also avid anglers, and they may rely on the annual fish runs to provide food as well.

People often participate in several different activities in one or more settings on any given trip, or they may find their desired experience in a single setting. Different activities lead to different numbers of people in a group, and to different amounts of time spent on the forest throughout the year. The following are four examples of how people recreate on the Tongass.

- The average unguided group includes three people in a skiff or small boat. They tend to recreate on a day use basis and usually are within the home range of a community.
- The average guided group is six people in a larger boat. They tend to recreate in the project area on a day use basis and may or may not be in the home range of a community.
- At one end of the activity spectrum, guided bear hunting consists of many groups at any given time, in small group sizes of one or two people. Hunters are dispersed across a large area of the shoreline, and they are near or within the shoreline zone for a relatively long period (from 5 to 10 days) during the spring and fall seasons. Their use is consumptive and is heavily influenced by regulations from state agencies.
- At the other end of the use spectrum, mid-sized tour boats consist of relatively few groups at any given time, with large group sizes (from 21 to 75 people) concentrated in the summer season. These tour groups are concentrated in relatively few areas of the forest shoreline; their use is short-term (usually two or three hours) and non-consumptive. Tour groups are primarily influenced by physical conditions allowing for large boat access and their route schedules. Groups of this size are approximately 7 percent of the number of groups who currently use the forest on an annual basis based on actual use reports provided by outfitters and guides.

Most outfitters/guides using the national forest access it by boats from saltwater. Some clients are dropped off on beaches, while others are also guided on land. Some operations focus on both fresh and saltwater fishing. Other outfitter/guides offer 'eco-tourism' packages that include sightseeing, short hikes, and wildlife viewing. The majority of charter boats in Southeast Alaska operate exclusively on saltwater for fishing or sightseeing without ever using the national forest.

Most recreation in the analysis area occurs as day trips originating from a nearby community (see Socioeconomics section). When people use the national forest for overnight trips, they generally use boats as base facilities and for sleeping, regardless of the type of activity. If boats are not used, remote tent camping is the norm.

Currently, there are 21 cabins and six shelters accessible by saltwater within the analysis area managed by the Forest Service for public recreation use. One cabin in

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the Hoonah Ranger District allows for some commercial use during periods of low use.

Access

The Tongass National Forest is a forested archipelago. The marine waters flowing between islands serve as the ‘road’ to this national forest. Recreation access to the analysis area is primarily by motorized boats and floatplanes. Helicopters and wheeled planes are used to a lesser extent. A unique and challenging aspect of recreation management in the analysis area is that almost the entire shoreline, including designated wilderness areas, is immediately adjacent to saltwater, which allows motorized boat traffic and floatplane access.

People can access the national forest to recreate in a number of ways including: canoe or kayak, personal motor or sailboat, charter boat, floatplane, wheeled plane, state ferry, tour boat, or cruise ship. Most of the non-motorized access is in the form of kayaks, although many kayaks are often first transported to remote locations by motorized boats or by floatplanes.

Because of the nature of the marine water access, recreation users tend to be highly mobile. Opportunities to encounter other parties are much greater for these highly mobile users than they would be if each party stayed in one location for the duration of its outing. Conversely, this mobility also allows people to avoid each other. Guided and unguided groups tend to disperse themselves geographically, with many groups moving around to seek areas without other people. If a bay or anchorage appears crowded, a group may avoid entering that bay to access the uplands.

In the DEIS, wheeled plane access to two specific locations on the Hoonah Ranger District were highlighted for comments. These locations were Mud Bay in Use Area 14-16B and Neka Bay in Use Area 04-11. While some use by wheeled planes had previously been authorized at these locations, there was a question as to whether or not to allow this use by commercial operators should continue considering the level of existing use by the general public. Most comments received regarding wheeled plane use in these locations requested no wheeled plane use by commercial operators because of the potential disturbance to brown bear as addressed through the interagency Brown Bear Management Strategy.

The consideration of wheeled plane use by commercial operators at Mud Bay or Neka Bay would have no effect on the continued use of wheeled planes by the general public. The closure of a specific means of mechanized access to National Forest System lands is a separate process and is not being evaluated in this document.

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Table 3-6. Amount (Acres) and Type of Recreation Opportunity (ROS) Available Within the Shoreline Zone by Use Area

Use Area	Primitive	Semi-Primitive Non-motorized	Semi-Primitive Motorized	Roaded Natural	Roaded Modified	Rural	Urban	Non-National Forest	Total Shoreline Zone in Acres
01-01	6,384	7,819	2,372	3,008	0	0	0	0	19,583
01-02	0	838	1,534	0	0	0	0	515	2,887
01-03	0	13,811	13,539	534	1,440	0	0	10,521	39,845
01-04A	19,163	10,253	5,710	162	0	0	0	4,681	39,969
01-04B	0	3,483	1,440	6,133	0	119	10	21,390	32,575
01-04C	1,069	16,836	12,249	5,223	0	0	0	2,505	37,882
01-04D	0	406	520	523	10	0	0	0	1,459
01-04E	0	3	0	51	0	0	0	5,029	5,083
01-05A	0	1,998	1,734	1,608	0	0	0	741	6,081
01-05B	20,284	12,720	9,135	5,587	0	26	0	710	48,462
01-05C	3,626	17,796	13,513	32	224	0	0	12,425	47,616
01-05D	17,702	10,437	12,307	0	0	0	0	0	40,446
01-05E	6,016	636	0	0	0	0	0	0	6,652
04-01A	29,410	0	408	0	0	0	0	0	29,818
04-01B	18,455	3,694	3,598	0	0	0	0	512	26,259
04-02A	860	1,604	3,327	6,950	203	0	0	2,999	15,943
04-02B	79,284	2,100	1,525	0	0	0	0	0	82,909
04-03	5,266	32,099	17,499	12,367	9,182	0	0	15,154	91,567
04-04A	0	5,431	2,043	0	5,983	0	0	52	13,509
04-04B	8,154	12,023	3,345	0	6,319	26	0	559	30,426
04-04C	895	973	811	0	0	0	0	554	3,233
04-05	18,141	269	6,145	0	0	0	0	1,040	25,595
04-06A	18,219	0	0	0	0	0	0	29	18,248
04-06B	16,357	1,561	1,775	0	0	0	0	37	19,730
04-07	21,142	0	3,716	0	0	0	0	24	24,882
04-08	10,990	6,196	10,810	6,501	0	0	0	1,693	36,190
04-09	16,856	11,307	5,433	0	0	0	0	447	34,043
04-10A	68	239	1,693	0	0	0	0	48	2,048
04-10B	7,835	4,316	4,196	4,708	0	0	0	1,851	22,906
04-11	33	11,391	20,545	0	8,408	0	0	16,013	56,390
04-12	4,183	10,190	20,673	59	10,012	0	0	8,065	53,182
04-13	19,577	10,406	8,414	353	10,258	0	0	2,178	51,186
04-14	27,802	887	1,082	0	0	102	0	302	30,175
04-15	36,069	12,508	17,331	0	0	133	0	2,914	68,955
04-16A	0	1,332	1,746	0	0	0	0	0	3,078
04-16B	0	3,449	3,130	0	0	0	0	167	6,746
04-16C	4,843	2,664	2,144	118	0	0	0	476	10,245
04-16D	0	5,882	9,765	191	0	16	0	214	16,068
Total	418,683	237,557	225,207	54,108	52,039	422	10	113,845	1,101,871

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Table 3-7. Amount (Miles) and Type of Recreation Opportunity (ROS) Available Within the Shoreline Zone by Use Area

Use Area	Primitive	Semi-Primitive Non-motorized	Semi-Primitive Motorized	Roaded Natural	Roaded Modified	Rural	Urban	Non-National Forest	Total Miles
01-01	34	10	16	23	0	0	0	0	83
01-02	0	0	9	0	0	0	0	10	20
01-03	0	0	91	2	5	0	0	95	193
01-04A	175	37	47	0	0	0	0	24	283
01-04B	0	0	0	23	0	0	0	139	162
01-04C	2	23	107	30	0	0	0	18	180
01-04D	0	0	2	3	0	0	0	0	5
01-04E	0	0	0	0	0	0	0	22	22
01-05A	0	1	9	10	0	0	0	4	24
01-05B	123	13	62	28	0	2	0	2	230
01-05C	16	16	108	1	0	0	0	74	215
01-05D	4	64	89	0	0	0	0	0	157
01-05E	17	5	0	0	0	0	0	0	22
04-01A	122	0	1	0	0	0	0	0	123
04-01B	86	0	48	0	0	0	0	6	140
04-02A	2	0	58	168	2	0	0	25	255
04-02B	493	15	17	0	0	0	0	0	525
04-03	25	56	154	141	41	0	0	170	587
04-04A	0	10	16	0	27	0	0	1	54
04-04B	41	48	30	0	38	0	0	5	162
04-04C	3	0	7	0	0	0	0	4	14
04-05	71	0	30	0	0	0	0	10	111
04-06A	124	0	0	0	0	0	0	1	125
04-06B	77	4	19	0	0	0	0	1	101
04-07	117	0	16	0	0	0	0	1	134
04-08	42	0	47	46	0	0	0	14	149
04-09	79	59	36	0	0	0	0	2	176
04-10A	0	0	9	0	0	0	0	0	9
04-10B	27	0	31	15	0	0	0	11	84
04-11	0	3	150	0	32	0	0	82	267
04-12	5	0	139	0	32	0	0	35	211
04-13	75	16	58	3	44	0	0	17	213
04-14	221	0	23	0	0	1	0	2	247
04-15	360	10	243	0	0	0	0	19	632
04-16A	0	0	11	0	0	0	0	0	11
04-16B	0	4	30	0	0	0	0	1	35
04-16C	17	0	18	1	0	0	0	3	39
04-16D	0	0	90	0	0	0	0	4	94
Total	2,358	394	1,821	494	221	3	0	802	6,093

Group Size

In this analysis, an average commercial group size of six people is used. Average group size for non-commercial users is estimated at three people.

Group size refers to the number of people recreating together and is an important factor in social interactions involved in recreation. Group size is an attribute of the recreation setting and is an important component in the expectations for a recreation experience. Numbers and types of social interactions with people other than one's own group significantly affect the quality of one's recreation experience.

Different groups respond differently to group size. For example, a group of kayakers camping on a beach may have a negative response to a large group of people from a tour boat on a sightseeing walk, but the large group from the tour boat may respond favorably to the kayakers.

There is a variety of group sizes of groups recreating in the analysis area. While groups generally have fewer than 12 people, larger groups, both guided and unguided, may also be present. In this analysis, we use an average commercial group size of six people. This figure is based upon the commercial use data reported from 1997 through 2001. For unguided users, average group size is estimated at three people, based on observations and professional judgment. Larger groups are often associated with commercially guided groups from tour boats. The largest guided group on the national forest reported was 70 people from a tour boat, in 1999. In the comments to the Draft Shoreline EIS, one response asked for the consideration of groups up to 150 people. There has already been group use approaching 75 persons, so this document will include discussion on groups up to this size. Most guided groups from mid-size tour boats range from 21 to 75 people in size (approximately 7% of current actual use by groups).

Any groups larger than 75 persons may still use National Forest System lands. Non-commercial group use permits are available to individuals or groups of more than 75 people at no cost. Commercial groups larger than 75 people would be required to be under permit and would require additional analysis.

The Forest Plan LUDs and ROS provide guidelines for group size in areas designated Primitive, Semi-Primitive Motorized and Semi-Primitive Non-Motorized (see Table 3-1 in this chapter and Table F-2 in Appendix F). The Primitive ROS class generally has a maximum party size of 12 people. Semi-Primitive Non-Motorized and Semi-Primitive Motorized ROS classes outside of wilderness generally have a maximum party size of 20 people. The more developed ROS classes of Roaded Natural, Roaded Modified, Rural and Urban do not specify a maximum group size.

Role of the Commercial Outfitter/Guide

Commercial use is defined as any use of the national forest for which a fee is charged by the outfitter/guide.

One goal of Forest Service commercial use authorizations is to make it easier for the public to visit national forests. Because of the remote and rugged nature of the Tongass, much of the forest requires good outdoor skills and/or specialized equipment for recreation. Many people do not have the skills or equipment but still want to try a particular activity or visit a remote area. Commercial outfitter/guides are important recreation partners with the Forest Service because they provide these services and opportunities to access the Tongass National Forest, where appropriate, for those people who cannot or do not desire to experience this area on their own. Commercial outfitters and guides often provide outdoor education and promote an

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appreciation and understanding of the natural environment. Commercial outfitter/guides can help maintain different classes of recreation settings by distributing people into underused areas.

Additionally, the Forest Service recognizes that the tourism industry is an important part of the economy of Southeast Alaska. Outfitter/guides provide services that add economic value to a recreation activity.

Outfitter/guides operating in national forests are required to have a special use permit authorizing them to provide commercial services to the public. Commercial use is defined as any use of the national forest for which a fee is charged by the outfitter/guide. Types of activities provided by outfitter/guides on the project area include big game hunting, freshwater fishing, remote setting nature tours and wildlife viewing, and camping. They also provide gear, boats, and access to the National Forest. A variety of businesses have commercial use permits for the analysis area, ranging from small family-run operations, to larger corporations, to non-profit organizations. Local non-profit organizations focusing on education and social services, such as the Sitka Community Schools, Sheldon Jackson College, the University of Alaska Southeast, and Raven's Way Southeast Alaska Regional Health Center (SEARHC), constitute a large amount of the commercial use in some areas, especially around Sitka.

Recreation Use Levels

Precise information on non-guided recreation and tourism use on the national forest is generally not available. Except for locations where fees are collected or where people can be easily counted, most of the use data are based on long-term observations, anecdotal information, and professional estimates adjusted with quantitative indicators where available. Commercial special-uses permits and recreation cabins reservations are the primary sources of quantifiable data. Most data on non-commercial use is available from peripheral sources that are often not directly related to use on the analysis area.

The Shoreline Outfitter/Guide Analysis used the most current information available. Many of the recent use patterns for Alaska and the United States have been documented in the Chugach Land Management Plan (USDA Forest Service 2002) and are incorporated in this analysis. We considered preliminary information from the *2000 Southeast Alaska Commercial Recreation Survey Preliminary Report* (Alaska Division of Community and Business Development 2001). We also noted observations from field personnel, the public, and the recreation industry.

Resident and Non-resident Use

In general, residents and non-residents are seeking the same recreation experience and types of activities. Because Alaska has a reputation for vastness, rugged beauty, and solitude, both residents and non-residents expect to find these qualities in the recreation settings. However, residents and non-residents may view the 'Alaskan experience' differently. Expectations often vary depending on a person's background; what is remote to someone from an urban area may seem intolerably crowded to a person who has grown up in rural Alaska.

Expectations often vary. What is remote to one may seem intolerably crowded to another.

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The Forest Plan sets aside many areas for primitive or semi-primitive recreation. However, some people may have a higher expectation of wildness and solitude in certain areas than is provided for in the Plan. This may cause a perception of crowding, and result in a recreation experience that did not meet the visitor's expectations.

Alaskan residents place a high value on the quality and availability of outdoor recreation opportunities, and ready access to these plentiful recreation opportunities is a strong quality-of-life component. The estimated proportion of Alaskan adults who participate in outdoor activities is generally much higher than for the rest of the United States (Bowker in press). Resident recreation often involves the gathering of fish, game, berries, mushrooms, and other plant products.

Both residents and non-residents may use the services of outfitter/guides. However, non-residents use outfitter/guides more often, because they lack the local knowledge or necessary equipment. Non-resident brown bear hunters are required to use big game guides. Most guided sport fishing clients are non-residents (Southeast Marketing Council 1988).

Residents of the communities in or near the analysis area usually use their own boats and equipment to access the national forest. Personal boats are often smaller than charter boats used by non-residents. Consequently, resident group size is smaller than non-resident group size.

Both guided and unguided users who have selected areas closer to towns or popular areas should expect to see more people during their outings. These expectations correlate with ROS classifications and standards for number of encounters from the Forest Plan. Season and weather, along with location, may affect the number of encounters experienced or expected. For example, a person generally expects to run into fewer people in April than in July. Expectations for a recreation experience change during the more crowded summer season or during deer hunting season within the home range of a town or community.

Residents express more concerns than non-residents that some areas are too crowded or will be too crowded in the near future. There is often a strong local interest in maintaining the status quo. Residents of the smaller communities in the analysis area reported feeling crowding from residents of larger nearby communities. Residents also often view non-residents negatively when encountering them on the forest. On the other hand, non-residents are less likely to object to encounters with residents during their outing; seeing the lifestyles and activities of residents may be a positive and desirable part of non-residents recreation experience.

Non-commercial Use

Non-commercial use in this analysis is defined as unguided use. It is use for which no special use permit is necessary (as long as the group size is less than 75 people) and for which no one receives financial benefits or other gain for services provided on the national forest.

The amount of unguided use occurring in the analysis area is difficult to quantify because reliable data is largely unavailable. Some recreation demand information is available on national and state levels, but Southeast Alaska is less studied. The remote and extensive nature of the analysis area makes monitoring of unguided use

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very difficult and costly. There is easy motorized access over saltwater from a multitude of communities; access is usually by boat or floatplane, and access can occur along almost the entire coastline. There are only a few points, such as Tracy Arm, where access is restricted enough that monitoring of unguided use can be done effectively. Since good information is not available, surrogate information from several sources was used to estimate unguided use levels and trends.

Recreation use information for this analysis was taken from the Forest Plan. We considered general information available in the Forest Service's national Infrastructure (INFRA) database. The most recent INFRA data available are averaged over the years 1998-2001 and are used to project future recreation trends at a large scale. We analyzed the Recreation Information Management (RIM) national database for historical information. We also reviewed comments from the public and observations from the Southeast Alaska Wilderness Exploration Analysis and Discovery (SEAWAAD) organization.

We also considered state and regional population growth, state visitation information, Forest Service recreation cabin rentals, and national and state recreation use information displayed in the Chugach Land and Resource Management Plan of 2002.

Alaska's population has continued to increase over the past several decades. U.S. Census Bureau information collected in 2000 shows that there has been a 14 percent increase in population statewide since 1990, compared to a 13.1 percent increase for the nation as a whole. However, this growth is not spread evenly across Alaska and may not apply to Southeast Alaska or to communities in or adjacent to the analysis area.

Although state and regional population changes do not necessarily have a direct translation to non-commercial use, this information in conjunction with the other indicators can provide a reasonable approximation of increasing recreation activity levels. Some aspects of population change would create different effects. For example, it could be presumed that an increasing segment of middle to high income individuals would translate into more use of the national forest, as more disposable income is likely to provide the opportunity to access the national forest more frequently. Alaska's median household income is almost 80 percent above the median U.S. household income (although family size in Alaska is also slightly higher than that for the U.S. as a whole). In general, recreation locations that require boat or plane access can be considered as being frequented more often by those from higher income brackets because of the cost of getting to a destination. Areas around communities are more likely to be used by middle and lower income groups for all activities, but particularly those activities that include recreational food gathering, hiking, fishing, and hunting. Comments heard during community public scoping meetings suggest that this is likely to be true.

In general, visits to Alaska by all modes of access have increased by more than two-fold over the period from 1985 to 1997 (Alaska Division of Community and Business Development 1998). Although visitation figures are for non-residents, and most of these are from large cruise ships, a general upward trend for resident use may also be inferred from this information.

The average annual commercial use in the analysis area for 1999 to 2001 was 2,446 group days, which is approximately 4 percent of the total recreation capacity

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Rentals of Forest Service cabins, generally restricted to non-commercial use only, might be used as another indicator of general non-commercial recreation trends, but this data is not reliable. Changes in the numbers of cabins on some districts over the years have affected the overall cabin use numbers. Other factors affecting cabin use include the implementation of a national reservation system, (which initially made renting cabins difficult for some users), and an increase in cabin rental fees.

The Forest Plan indicates that Southeast Alaska residents account for the majority of recreation activity on the national forest (Forest Plan, Part 2, p. 3-433). Despite what appears to be an increasing trend for both commercial and non-commercial recreation use, there are few locations where potential capacity seems to have been reached, due in part to the relatively sparse population of Alaska as a whole. During scoping for this project, residents identified relatively few specific locations as being crowded.

There are reports of illegal outfitting/guiding (outfitter/guides without permits to operate on National Forest System lands), which does not show up in the actual commercial use data; however, this illegal use is thought to be minor in relation to the overall amount of authorized commercial use. There are also businesses that transport customers to the field, primarily by floatplane or water taxi. These businesses only transport people to the national forest; they do not fill the role of outfitter/guide. This type of use is classified as non-commercial in this analysis since it is in support of unguided recreationists.

Unguided recreation use is estimated to be below the available recreation carrying capacity levels based on many indirect measures including Forest Plan projections, census information, recreational cabin use, Alaska Department of Fish and Game (ADF&G) license and survey information, field observations, anecdotal information, and professional judgment. Only recreation use occurring on the national forest is included in these estimates, and they do not include use on the saltwater where most of the use and the reports of crowding are occurring. Unguided recreation use is not expected to increase at rates higher than the general population growth.

Average Current Commercial Use Levels

Data on commercial use are much more complete and accurate than the data for non-commercial use. Outfitter/guides are required to report annual use as part of their permit terms. Historical use data were not collected or stored uniformly and are of limited use although some summary information exists. Use information from 1994 to 2001 shows a dramatic increase in the role of businesses supporting and promoting recreation use in the analysis area. The number of outfitter/guide clients has increased from approximately 1,550 to 15,700 during that time period.

The best information available for commercial recreation use in the analysis area is the 1999-2001 period averaged commercial use data, based on use reports submitted by permitted outfitter/guides. The 1999-2001 use data is the most current data available and is used as a benchmark in this analysis. A summary of this data, showing use by season for each Use Area is displayed in Table 3-8. The total commercial use on National Forest System lands from 1999 to 2001 was approximately 2,500 group days (an average of 15,500 clients annually), which is approximately 4 percent of the total recreation capacity.

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Commercial recreation activities occurring in the shoreline zone of the northern Tongass are displayed in Table 3-9, and in Figures 3-1, and Figure 3-2. Several observations can be made from this use information.

- Recreation use is not evenly distributed among the Use Areas. Some Use Areas experience much higher levels of use than other areas. Use levels are not a good indicator of crowding without considering the differences in Use Area size, the number of potential anchorages, varying types of vegetation and terrain accessibility.
- Most commercial recreation activity takes place in summer and corresponds with cruise ship activity, increased private boating by both residents and non-residents, and a general increase in resident recreation activity. Consequently, the summer months are likely the time in which perceptions of crowding and conflicts between different users will be most pronounced.
- The guided activities occurring on the national forest include remote scenic nature tours (hiking, wildlife viewing, and sightseeing), hunting, and freshwater fishing.
- Approximately 26 percent of the guided activity between 1999 to 2001 was related to hunting or freshwater fishing. This implies a strong link between commercial recreation and healthy fish and wildlife populations. Wildlife viewing also attracted visitors engaged in other activities such as camping and sightseeing.
- Hunting is the major guided activity in the spring and fall. While the summer months are the most crowded in terms of number of groups on the national forest, spring and fall bear guides and hunters may run into perceptions of crowding sooner than other users because this activity requires more space and solitude.
- Approximately 19 percent of all groups camp on the National Forest as a part of their trip.

Several differences can also be observed when the number of groups and number of individuals participating in particular activities are examined (Figures 3-1 and 3-2). Guided freshwater fishing accounted for about one-quarter of the commercial use groups, and anglers made up almost one-fifth of the commercially guided individuals. Big game guides accounted for just over one-quarter of the groups, but these groups were small and only made up 8 percent of the individuals. Hikers involved in remote based nature tours included just about one-quarter of the guided groups but, because of their often large group sizes, made up 46 percent of the guided individuals.

Table 3-8. Average (1999-2001) Commercial Use in Group Days and Percentage of Total Carrying Capacity by Season and Use Area

Use Area	General Location	Spring Group Days	Summer Group Days	Fall Group Days	Total Average Group Days	Total Recreation Capacity Used Commercially (%)*
01-01	Skagway Area	1	0	0	1	0.2
01-02	Haines Area	0	0	0	0	0.0
01-03	East Chilkats	3	15	0	18	0.5
01-04A	Berners Bay	2	25	0	27	1.4
01-04B	N. Juneau Coast	0	1	0	1	0.1
01-04C	Taku Inlet	0	0	1	1	0.0
01-04D	Slocum Inlet	2	44	2	48	2.5
01-05A	Taku Harbor	9	23	1	33	1.6
01-05B	Port Snettisham	3	48	0	51	1.3
01-05C	Windham Bay	7	57	2	66	1.3
01-05D	Tracy Arm	7	55	8	70	3.0
01-05E	Ford's Terror	1	16	0	17	2.9
04-01A	Gut Bay, Baranof	12	54	12	78	5.0
04-01B	Port Armstrong	20	30	10	60	4.4
04-02A	Redoubt Lake	1	13	3	17	1.5
04-02B	Whale Bay	18	73	13	104	2.6
04-03	Sitka Area	26	45	36	107	1.4
04-04A	Lake Eva, Rodman B.	20	78	9	107	6.9
04-04B	Kelp Bay	18	114	11	143	8.1
04-04C	Baranof Warm Sp	2	19	1	22	3.8
04-05	SW Admiralty	26	51	37	114	9.7
04-06A	Pybus Bay	20	79	8	107	18.3
04-06B	Eliza Harbor	22	5	3	30	5.1
04-07	Gambier Bay	25	55	14	94	8.0
04-08	NE Admiralty	0	6	0	6	1.1
04-09	Seymour Canal	15	11	0	26	1.3
04-10A	Greens Creek	2	72	3	77	9.8
04-10B	NW Admiralty	23	15	16	54	4.0
04-11	Hoonah Area	31	76	3	110	4.0
04-12	Tenakee Inlet	33	43	33	109	3.7
04-13	Peril Straight	92	47	34	173	5.5
04-14	Slocum Arm	26	12	8	46	2.9
04-15	West Chichagof	21	101	6	128	3.3
04-16A	Point Adolphus	4	126	0	130	11.1
04-16B	North Chichagof	12	84	1	97	8.3
04-16C	Idaho Inlet	10	102	6	118	10.1
04-16D	Port Althorp	1	55	0	56	4.9
Total		515	1,650	281	2,446	4.3

Note: The total recreation capacity in group days for the analysis area is 81,315.

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Table 3-9. Percentage of Commercial Use (Group Days) by Activity and Season (Average 1999 – 2001)

Activity	Spring	Summer	Fall	Total
Fish	8%	36%	20%	29%
Hunt	80%	20%	73%	25%
Remote Scenic Nature Tour	12%	62%	7%	46%

* Approximately 2,500 group days/year

Figure 3-1.

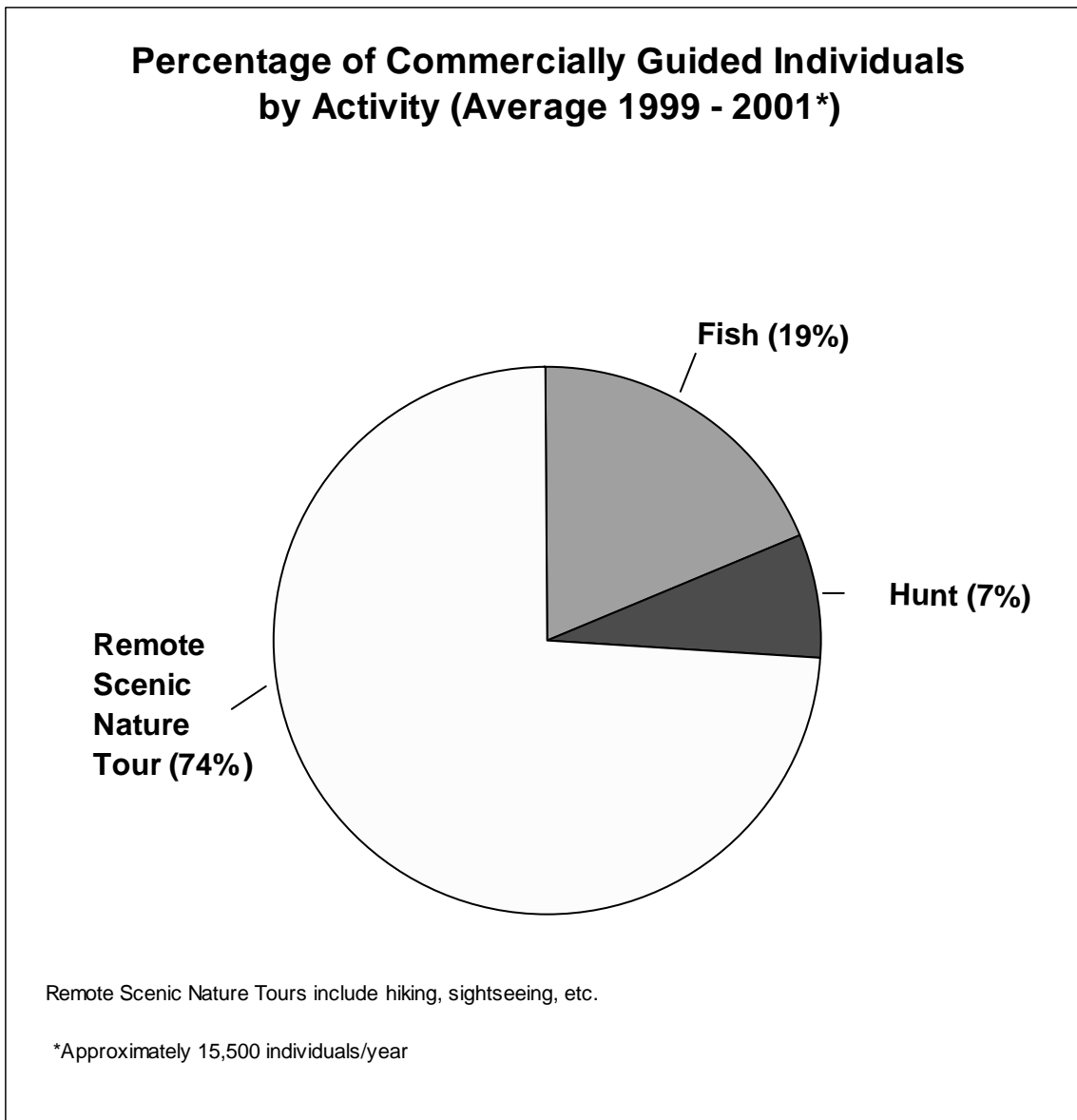
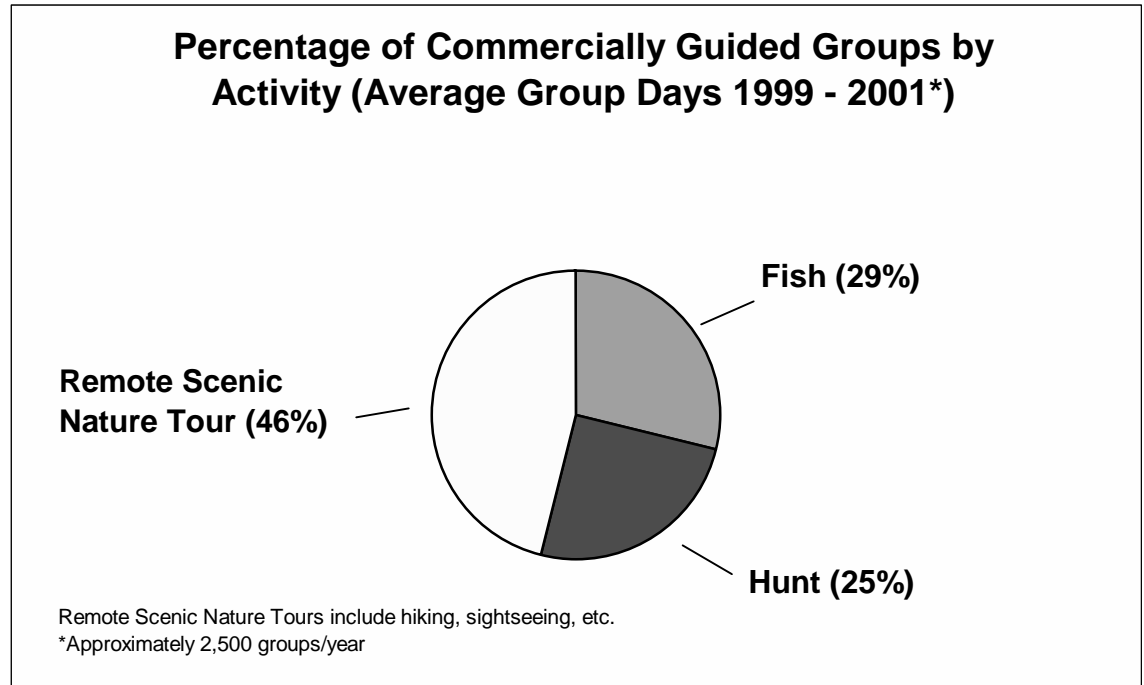


Figure 3-2.



Heavy Use Areas

Although the shoreline zone encompasses a large area of land, recreation opportunities are not available at all points along the shoreline. Due to differences in accessibility, as well as features of interest, several areas of the national forest have high use levels and/or limited capacity resulting in a sense of crowding or the concern that it will soon occur. Some examples of these areas include Gambier Bay, Greens Creek, Brothers Islands, George Island, Idaho Inlet, Mud Bay, Pinta Cove, Point Adolphus, Williams Cove, Slocum Inlet, Kelp Bay, and Lake Eva Trail.

The information about areas of concerns was used to help define the boundaries of some Use Areas and locate large group use sites for this analysis.

These sites are in popular saltwater bays adjacent to the national forest. Although the Forest Service doesn't manage use on saltwater, this use may contribute to a sense of crowding on the national forest uplands in these areas.

The amount of use, season of use, and the recreation activities vary between sites where there is an existing perception of crowding. Some of these popular areas may seem crowded due to relatively high levels of use while other areas seem crowded due to the presence of large groups, or due to large numbers of overnight campers.

General Recreation Trends

Precise information is not available on Tongass recreation and tourism. Except for locations where fees are collected or where people can easily be counted, most use data has historically been based on observation, anecdotal information, and professional estimation. Generally, many residents and nonresidents seek the same

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recreation experiences and engage in similar activities. Expectations vary by group and individual, as people have differing expectations of solitude or wildland experience.

Many residents of southeast Alaska place high value on the quality and availability of outdoor recreation opportunities in the region. This is evident in that the proportion of Alaska residents who participate in outdoor activities is generally much higher than elsewhere in the United States. Local residents often engage in dispersed recreation activities on National Forest and in saltwater adjacent. Accurate data on this type of use is difficult to obtain. Estimates tend to either underestimate the nature and extent of this use or overcompensate in inconsistent ways. The net result is that, though there is general consensus that outdoor recreation opportunities and activities are highly important to area residents, there is little documented evidence to clearly support this view.

Recreation demand is influenced by a number of factors including: regional population levels, per capita participation rates, and recreation travel behavior. Visitor data compiled for Alaska in 2000-01 as part of the Alaska Visitors Statistics Program (AVSP) indicated that there were approximately 1,010,000 summer visitors to southeast Alaska. This was twice the number of visitors identified during the AVSP study completed in 1993-94. The 2001 AVSP study found that 44 percent of summer visitors to Alaska were package visitors. Independent visitors accounted for 30 percent of total statewide visitation, with “inde-package” visitors comprising the remaining 27 percent. Visitors were classified as independent if they did not plan to purchase any type of commercially available tour. Inde-package visitors were those visitors who were traveling independently, but indicated that they planned on purchasing a tour of some kind.

Although it is reasonable to assume that the vast majority of visitor recreation and tourism activity in the region is related to the natural environment, not all of the activity can be directly linked to the Tongass National Forest. Many visitors experience the Tongass passively, from the deck of a cruise ship, for example, without directly using the forest for recreation purposes. It should be noted however, that many passengers do take at least one trip to the forest during their visit.

With a few exceptions, most recreation activities are predicted to increase at the same rate as the overall population growth in Alaska. However, as the population increases and its demographics change, recreation patterns are also subject to change. For example, national demographics point to the aging of the American population. As people age, they are less likely to participate in physically strenuous activities such as hunting or kayaking, and more likely to participate in activities such as walking, sightseeing, fish and wildlife viewing, bird watching, and fishing. Studies used in the Chugach Land Management Plan Revision (USDA Forest Service 2002) estimate that visitors to Alaska would outnumber Alaskans participating in wildlife viewing by almost three to one by 2020.

The number of visitors to southeast Alaska has increased significantly over the past decade. The number of summer visitors increased approximately 40 percent from 1993 to 2001. It should, however, be noted that the number of summer visitors to Alaska remained fairly constant between 1999 and 2001, increasing by just 0.5 percent. The number of cruise ship passengers visiting Juneau more than doubled between 1993 and 2000, growing from approximately 307,000 to about 632,000

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passengers respectively. The number of passengers docking in Juneau is considered representative of the total number of cruise ship passengers because the majority of cruise ships visiting southeast Alaska stop there. Sitka was a noteworthy exception to this general trend, with absolute decreases in passenger volume during the latter half of the 1990s.

The rapid growth and sheer magnitude of the cruise ship industry has important implications for recreation planning on the Tongass. Shore excursions have become an integral part of the cruise ship experience, providing increased revenues for cruise ship operators and opportunities for local entrepreneurs. While much of this activity has been concentrated at major ports of call like Juneau and Sitka, several small and mid-sized cruise ships are now active, taking customers to smaller communities or work as outfitter/guides for shore excursions in areas that are bypassed by the larger ships.

In the Tongass SEIS (2003), projections assume that recreation use and projected demand will continue to increase on an annual basis (an expected 108 percent increase when looking at 1995 to 2010). The use of linear projection (i.e. the assumption that Tongass-based recreation activity will increase in the future at the same rate as it has in the past) is problematic when used to model the future. Numerous factors will affect future demand for recreation. These include general economic trends, public preference, change in relative costs (airfare for example), and temporary factors, such as the weather, gasoline shortages, ferry strikes, and other local, national, and international factors.

Outfitter/guide use information compiled for the project area shows an increase from approximately 1,500 clients in 1994 to approximately 14,000 clients in 1999.

The number of independent travelers is also increasing. Air passenger traffic into Juneau during the peak tourism months of June, July and August, has risen at an average rate of seven percent per year since 1991, although there is evidence that the rate is slowing in recent years (Colt et al. 2000), and the overall numbers were affected by the terrorist attacks on 9/11/2001. In general, however, the growth in the number of tourists has brought a change in the characteristics of the typical Juneau tourist. Many of the new travelers are younger, more independent, and interested in family activities, including those related to adventure and the environment (Alaska Dept. of Labor TRENDS website).

Changes in the economy that reduce disposable income may also reduce the number of non-residents who can afford to travel to the analysis area. However, effects of the economy and changing national demographics are not appropriately extrapolated down to the project level.

ANILCA 1307

On July 11, 2003 the Forest Service published a final rule in the Federal Register that augmented regulations for authorizing commercial use of National Forest System lands in Alaska. This specifically applies to providing visitor services within Conservation System Units (CSUs). A CSU is defined in Section 102(4) of ANILCA and applies only to congressionally designated wilderness areas. CSUs could eventually include recommended Wild and Scenic Rivers on the Tongass, if and when Congress inducts the rivers into the Wild and Scenic River System.

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The rule-making was required by Section 1307 of ANILCA and is specific to Alaska.

Section 1307 (16 U.S.C. 3197) of ANILCA requires the Secretary of Agriculture to grant certain rights to historical outfitter/guides and grant certain preferences to local residents and most directly affected Native Corporations in connection with the provision of revenue-producing visitor services on certain National Forest System lands in Alaska. This regulation implements these statutory rights and preferences.

The final regulation deals only with implementing the rights granted to certain visitor service providers and the preferences provided to certain applicants for visitor services by Section 1307 of ANILCA. Procedures for deciding whether specific uses should be authorized are addressed in existing regulations and applied on a case-by-case basis in accordance with existing law, regulations and policy.

By statute, historical outfitter/guides are persons who were engaged in adequately providing visitor services in an area prior to January 1, 1979. Under Section 1307 and the final rule, historical outfitter/guides may continue to provide the same or similar visitor services and not face competition at the time of permit renewal.

In accordance with Section 1307 of ANILCA, the preferences for competitive issuance of visitor service special use permits, do not apply to the guiding of sport hunting and fishing.

Environmental Consequences

Each alternative emphasizes a different mix of commercial allocations, settings, and measures to reduce user conflicts. Different interests and facets of recreation and tourism management are addressed across the range of alternatives. The following section describes the effects of alternatives on the different components of the recreation resource and issues. It includes a discussion of the effects on commercial and non-commercial recreation users and outfitter/guide businesses. Many of the same measures are repeated between issues to display the different perspectives unique to the issue.

Availability of Recreation Opportunities for the Guided and Unguided Recreationists (Issue 1)

This issue focuses on the individual guided and unguided recreation user. Effects on both guided and unguided recreationists involve both qualitative and quantitative measures. Alternatives are compared for effects on recreation carrying capacity allocation, recreation opportunities (ROS), number of people accessing the forest with commercial outfitters and guides, large group areas, and opportunities for solitude.

Allocation Of Recreation Carrying Capacity To Guided Recreationists

As noted in Chapter 2, a carrying capacity was developed for this project area. The RCC can be used as a basis for a more site-specific analysis for a decision on commercial allocations (see Recreation Carrying Capacity Analysis on page 3-7). Based on this analysis, the ID Team developed alternatives to meet various resource objectives or goals to be considered in this analysis.

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The following table shows the number of group days available for commercial recreation use by Alternative by season.

Table 3-10. Number of Group Days Available for Commercial Recreation Use by Alternative and Season

Alternative	Spring Allocation	Summer Allocation	Fall Allocation	Total**
1	*	*	*	*
2	1,693	12,588	1,894	16,175
3	8,463	21,359	9,475	39,297
4	1,202	3,722	1,135	6,059
5	1,995	10,737	4,798	17,530

*Alternative 1 does not specify a specific allocation by season.

**The average total use for the analysis area by group day is currently approximately 2,500

Alternative 1 is the no action alternative. This alternative does not identify an allocation of the carrying capacity for commercial recreation use. Existing use by outfitter/guides would continue as currently authorized and as is consistent with Forest Plan direction. Requests for additional use could only be accommodated by additional analysis. The amount of additional use that could be allocated on a case-by-case basis would be approximately half of the appropriate carrying capacity, which could be at the levels as identified in Alternative 3.

Alternative 2 was the proposed action, which was identified through the early stages of the public participation process. Approximately 21 percent of the total carrying capacity would be allocated to commercial recreation use as a whole through all seasons. Individual Use Area allocations range between approximately 10 to 40 percent of the total recreation carrying capacity (See Table 2-2). There was an emphasis to limit commercial use in the spring and fall seasons to approximately 10 percent of the carrying capacity to minimize the impacts to existing outfitter/guides and to provide additional opportunities for solitude to the outfitter/guides and the general public.

Alternative 3 follows the Forest Plan direction to authorize up to half of the carrying capacity to commercial recreation use. Approximately 50 percent of the total recreation carrying capacity is allocated to the Use Areas for all seasons (see Table 2-3). This level of use would still adhere to the Forest Plan standards and guidelines for group sizes and allow for uses consistent with specific LUDs.

Alternative 4 provides for the lowest allocation for commercial recreation use. Approximately 8 percent of the total carrying capacity would be allocated to commercial recreation use as a whole through all seasons. Individual Use Area allocations range between approximately 5 to 25 percent of the total recreation carrying capacity (See Table 2-6). Alternative 4 allows a lower level of use for the spring and fall seasons than in Alternative 2 to further minimize the impacts to existing outfitter/guides and to provide additional opportunities for solitude to the outfitter/guides and the general public.

Alternative 5 was identified as the preferred alternative in the Draft Shoreline EIS. Approximately 23 percent of the total carrying capacity would be allocated to

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commercial recreation use as a whole through all seasons. Alternative 5 provides for approximately the same level of group use in the spring as in Alternative 2 (with the exception of the Sitka Use Area 04-03). The summer season allows for almost the same level of group days as in Alternative 2 but there are changes to the level of group days by Use Area to be responsive to comments received in the early scoping of this document. The fall season allows for a considerable amount of grow in most Use Areas than is proposed in either Alternative 2 or 4. Individual Use Area allocations range between approximately 10 to 40 percent of the total recreation carrying capacity (See Table 2-9).

Allocation Available To Guided Recreationists

The total commercial allocation levels provide a measure of the amount of recreation use available to guided recreationists. They also provide a measure of the potential for crowding. The alternatives provide a range of total allocations and allocations by Use Area and season.

Table 3-11. Commercial Allocation Data by Alternative

	Alt. 1*	Alt. 2	Alt. 3	Alt. 4	Alt. 5
Total commercial allocation available (Group Days)	2,500 to 40,658	16,175	39,297	6,059	17,530
1999 - 2001 Commercial Use (average group days)	2,500	2,500	2,500	2,500	2,500
Currently unused allocation	Up to 37,940	13,675	13,675	3,559	15,030
Percent of the alternative's average commercial allocation used from 1999 - 2001	NA	14%	6%	40%	13%

*Commercial recreation use will grow only as authorized by separate analysis

In general, perceptions of crowding may correlate to the amount of carrying capacity used. The more recreation use an area receives, by both guided and unguided recreationists, the greater the potential perception of crowding.

One measure of the potential impacts of commercial use on unguided users is the proportion of a given Use Area's total recreation capacity that is used by outfitter/guides. In general, negative impacts associated with crowding, such as encounters, noise or evidence of use (trash, human waste, trampled vegetation), will vary directly with the proportion of recreation capacity that is actually used. Commercial use will add to the total use of an area and therefore add to crowding and related negative effects.

Conversely, unguided use results in the same kind of impacts to outfitter/guide clients and other unguided users, but unguided use at this time is not regulated and is not anticipated to grow as rapidly as the commercial component.

The total allocations in all the alternatives (Table 3-12) could exceed the average current (1999-2001) level of guided recreation use of approximately 2,500 group days. Alternative 1 could exceed the average current level of guided recreation use (if case-by-case analysis approved increased use). The highest total commercial

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allocation would be made under Alternative 3, which would provide 39,297 group days. Alternative 5 would provide 17,530 group days, followed closely by Alternative 2 with 16,175 group days. The lowest total allocation would be Alternative 4 with 6,059 group days.

Alternative 3 would allow for the most commercial recreation growth over the next five years and likely have the most effect on guided and non-guided users. If outfitters/guides with large groups make use of the large group areas identified under Alternative 3, it is likely that impacts smaller guided groups and to non-guided use could be reduced (More than 90 percent of the commercial use is anticipated to continue to be with small groups.) This is because non-guided users could avoid areas where they know large concentrations of use are likely to occur.

Alternative 5 would have less of an impact than Alternative 3, as the number of people potentially using the Forest under this alternative is considerably lower (Alternative 3 allows almost 243,000 people while Alternative 5 identifies approximately 110,000 people). Alternative 2 has about 9,000 fewer people than in Alternative 5, but no large group areas are identified for Alternative 2 that could be used to concentrate use.

Alternative 4 would have less impact, as the total allocation for this alternative is less than half the use identified in Alternatives 2, about one-third of the use identified in Alternative 5, and only one-fifth of the use proposed in Alternative 3.

Alternative 1 would maintain the existing level of use, unless additional analysis was completed on a case-by-case basis. There is potential for additional use in most Use Areas but whether these increases would occur depend on how requests were addressed: by priority, by district, or by Use Area.

Allocation Available to Unguided Recreationists

This analysis does not regulate unguided use. Any unused commercial allocation would be available for unguided recreationists. Unguided recreation use levels are not precisely known. However, the large amount of available recreation carrying capacity in the analysis area is expected to meet the demand for unguided recreation in all alternatives, considering projected limited increases in local resident populations and the number of independent travelers visiting locations in the analysis area.

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Table 3-12. Total Recreation Carrying Capacity with Commercial and Non-Commercial Allocation by Alternative

	ALT 1	ALT 2	ALT 3	ALT 4	ALT 5
Total recreation carrying capacity in group days*	81,315	81,315	81,315	81,315	81,315
Total commercial allocation of recreation carrying capacity in group days	2,500 to 40,658**	16,175	39,297	6,059	17,530
Percent of total recreation capacity allocated to commercial use	3 to 50%*	21%	50%	8%	23%
Remaining total recreation carrying capacity available after allocation in group days. (Non-Commercial Use)	NA	65,141	42,019	75,257	63,786
Percent of total recreation capacity available after allocation. (Non-Commercial Use)	NA	79%	50%	92%	77%

*Total recreation carrying capacity for analysis area that maintains the setting according to Forest Plan standards and guidelines.

**Alternative 1 does not make a specific allocation; commercial use is authorized on a case-by-case basis and could range from average current use levels (2,500 group days) to the maximum of 50% (40,658) allowed by the Forest Plan.

Currently, commercial use levels area at about 4 percent of the total recreation carrying capacity in the project area. See Table 3-8 for commercial use and its relation to total capacity by Use Area. However, certain Use Areas experience higher levels of commercial use in some seasons. Point Adolphus (Use Area 04-16), for example, had commercial use levels of about 24 percent of summer capacity, and the nearby Idaho Inlet (04-16C) had commercial use levels equivalent to about 20 percent of summer capacity. In addition to these areas, 12 other Use Areas experienced commercial use levels between 10 and 20 percent of total capacity during at least one of the seasons from 1999 to 2001.

If combined unguided and commercial recreation use should approach or exceed the total carrying capacity in any Use Area, options for addressing the situation could include: not issuing a special use permit to new outfitter/guides, or establishing a competitive process to allocate commercial use. For the non-guided public a mandatory permit may be initiated or other administrative actions to reduce impacts (examples include designating campsites and limits on campfires and pets). Once a decision is made for this document, only an amendment to the decision would allow for use to occur beyond approved levels. Amendments to the decision would include additional public comment periods to ensure the public has opportunity to continue providing input to the management of the National Forest.

The consideration of either a rural or Native Corporation preference for providing visitor services as allowed by the ANILCA 1307 regulation would only occur in

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Wilderness or on National Trails when it has been determined that there is a competitive interest and when the commercial recreation capacity is limited. This preference may also be considered within Wild and Scenic River corridors if and when Congress designates any or all of the rivers recommend in the Forest Plan decision. This preference would not apply to sport hunting or fishing.

None of the alternatives provide total use levels below existing total use. However, some alternatives could limit commercial use in several Use Areas to levels lower than the average use (1999-2001) during the spring and fall seasons. This could ease the sense of crowding in these areas. In Alternative 2, five seasonal Use Areas would reduce commercial use levels. Alternative 4 has one seasonal Use Area where existing commercial use would be reduced and Alternative 5 has four seasonal Use Areas where existing commercial use would be reduced. Alternative 3 would not reduce current commercial use.

The Forest Plan notes that where there is surplus capacity not being used by the general public, temporary use permits for specific periods of time (not to exceed one year) may be authorized. Such temporary use does not qualify for credit toward priority use by a permit holder. The determination of a surplus capacity and allocation of this use on a temporary basis can be considered on a case-by-case basis and authorized by the Forest Supervisor. This would need to occur through an amendment to this decision.

Recreation Opportunities Available

ROS Classes

- Primitive
 - Semi-Primitive/
Non-motorized
 - Semi-Primitive/
Motorized
 - Roaded Natural
 - Roaded Modified
 - Rural
 - Urban
-

All the alternatives would provide the variety and type of recreation experience anticipated in the Forest Plan. Commercial activities and allocations would not exceed Forest Plan standards and guidelines under any alternative. These include the commercial recreation use occurring within Wilderness and suitable Wild, Scenic, and Recreation River corridors.

The Forest Plan and Recreation Opportunity Spectrum (ROS) are used to define the types of settings that provide the recreation experience available on the national forest. The allocations for each Use Area represent a portion of the carrying capacity for that area. The recreation settings available for each Use Area for all alternatives are displayed in Tables 3-6 and 3-7, earlier in this section. The amount and type of recreation setting available in each Use Area are presented in acres and miles of shoreline for each ROS class.

A variety of recreation experiences would be available in the analysis area: approximately 38 percent of the shoreline zone would provide primitive recreation experiences, while another 42 percent would provide semi-primitive recreation experiences at the levels of commercial use proposed by the alternatives.

A summary of the percent of the shoreline zone area available in each ROS class for all the alternatives is shown in Table 3-13. A summary of the percent of the miles of shoreline available in each ROS class for all the alternatives is shown in Table 3-14.

None of the alternatives would change the existing ROS class; however, some alternatives would increase the potential for future changes in the ROS, within the range allowed by the Forest Plan. The alternatives vary by maximum group size components of the social encounters setting indicator for Semi-Primitive and Semi-Primitive Motorized ROS classes in Old-Growth Habitat, LUD II, and Semi-Remote

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Recreation LUDs. These ROS classes generally limit the group size to 20 people. Three alternatives identify large group areas where group sizes larger than 20 people may occur. These areas vary in terms of the number, size, and type of large group use. (See the Large Group Areas discussion, later in this section.)

Table 3-13. Percent of the Shoreline Zone (Area) Available in Each Recreation Setting to Provide the Expected Recreation Experience (ROS) for All Alternatives

ROS Class	Percent of Area
Primitive	38
Semi-Primitive Non-Motorized	22
Semi-Primitive Motorized	20
Roaded Natural	5
Roaded Modified	5
Rural	<1
Urban	<1
Non National Forest	10
Total	100%

Enclaves—areas where large groups can occur on a regular basis throughout the season.

Fifteen-percent areas—places where large groups can occur only on an occasional basis, for less than 15% of the primary use, (summer), season.

Table 3-14. Percent of Shoreline Miles Available in Each Recreation Setting to Provide the Expected Recreation Experience (ROS) for All Alternatives

ROS Class	Percent of Miles
Primitive	39
Semi-Primitive Non-Motorized	6
Semi-Primitive Motorized	30
Roaded Natural	8
Roaded Modified	4
Rural	<1
Urban	0
Non National Forest	13
Total	100%

While group size is one of the several criteria in determining ROS class, the group size specified in these large group areas is not considered a significant enough factor to change the ROS by itself in either the Fifteen-Percent or Enclave areas for this project. Large groups in this analysis are limited in size to 75. In addition, large group use in Fifteen-Percent areas is allowed only occasionally and will not lead to a change in ROS. Regularly occurring large groups in enclaves could result in the need for more development and site hardening in the future. These changes,

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combined with the large group size and increased use levels, could result in change in the ROS to a more developed classification. The Forest Plan allows ROS changes in development up to the Rural ROS class in these Enclaves. These potential changes in ROS class can be quantified in acres.

Alternative 3 could result in the most potential for changes to ROS class. It identifies 6,100 acres in 33 Enclave areas that could change to a more developed ROS class in the future. Alternative 5 has the second highest potential because it identifies 5,100 acres in 28 Enclave areas. Alternative 4 has the third highest potential because it identifies 2,100 acres in 12 Enclave areas. Alternatives 1 and 2 would allow for continued use by large groups in locations that have been historically been approved by the District Ranger. Examples of these are Williams Cove on the Juneau Ranger District, Kelp Bay and Lake Eva on the Sitka Ranger District, and George Island on the Hoonah Ranger District. Use by large groups at these locations is consistent with Forest Plan direction. Alternative 1 and 2 has the lowest potential for changes in the ROS because it would require additional analysis. See Tables 3-15, 3-16, and 3-17 for the areas and acreage designated for large group use by alternative. Alternatives with a higher allocation for commercial use will have the most impacts to the non-guided recreation user. These impacts include dispersal, displacement, and increased competition at popular locations.

Trends show that recreation use is expected to grow on the Tongass; however, impacts will vary by alternative depending on the total number of group days, number of large group areas, their locations, and the extent of their use. Commercial use is expected to follow historical patterns where more than 90 percent of the outfitter/guides are comprised of groups smaller than 21 persons in size.

Dispersal –when people spread out and travel farther to find desirable and available campsites or places.

Displacement – when people avoid an area on a long-term basis because of regulation or crowding

As the number of small commercial groups increase and spread out in the analysis area, there will be a greater likelihood of groups dispersing, becoming displaced, or crowded from existing popular locations in all alternatives. Groups may not spread out evenly, which could add to the perception of crowding. In addition, when the Use Area allocation is reached, groups may have to consider other locations for their activities or limit use to their existing levels. These impacts will likely be similar in all alternatives for non-commercial groups as well since both groups use many of the same locations. However, based on recreation and population growth trends, the non-commercial groups are less likely to increase at the same rate as the commercial groups.

Alternative 3 provides the most number of large group areas (Enclaves and Fifteen-percent areas), along with the largest allocation for commercial recreation growth. Under Alternative 3, the increase in use on the forest would likely occur first near communities receiving larger cruise ships. Once in communities, visitors would access the forest through small excursions provided by outfitters or guides. In addition, small and mid-sized tour boats would likely use areas along primary travel routes. The areas along Peril Strait (to and from Sitka), or those on the mainland along Stephens Passage (to and from Juneau) are most likely to be used.

A recreation development that opened for use in 2004 near Hoonah will accommodate large cruise ships and could generate additional interest in shore excursions in Port Frederick or in the Point Adolphus area. The extent of growth over the next five years is largely dependent on continued expansion of the tourism industry, as noted in the Tongass SEIS (2003) recreation trends.

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In Alternative 5, use would likely follow a similar pattern as Alternative 3, but with less than half the people. Alternative 5 offers ten fewer large group areas than Alternative 3, but also is similar to Alternative 3 as these large group areas are distributed throughout the project area.

Alternative 4 accommodates less than one-third of the users anticipated in Alternative 5 (a reduction from more than 110,000 users in Alternative 5 to less than 38,000 in Alternative 4.) Alternative 4 offers 15 large group areas versus 48 in Alternatives 3, and 28 in Alternative 5. Alternative 4 offers designated areas for large group use which should allow for more concentrated use by these groups. These fewer number of large group areas in Alternative 4 may make it more difficult for large groups to concentrate their use than in Alternatives 3 and 5.

With no large group areas identified in Alternatives 1 or 2, large groups would not be able to concentrate their use as easily as in alternatives that have designated large group areas.

Without large group areas, dispersal of groups throughout a bay or Use Area may contribute to reaching identified use levels more rapidly. Since Alternative 1 would continue current management of Use Areas, expansion of use would likely occur more slowly since additional analysis would accommodate growth as requested on a case-by-case basis.

All groups exceeding 75 people require a permit for use of National Forest System lands. Guided groups of more than 75 individuals would require site-specific analysis and concurrence by an authorized official (District Ranger or Forest Supervisor depending on the scope of the request) prior to approval of use. Non-commercial groups of 75 or more persons using the forest as participants or spectators are required to obtain a group use permit from the District Ranger as directed by 36 CFR 251.54.

Effects on Unguided Recreationists

Unguided recreation use is not being regulated in this project. No restrictions are established for unguided recreationists. If total recreation use were to approach the total recreation carrying capacity in a Use Area in the future, both guided and unguided use would need to be managed and would be evaluated in a separate future analysis.

Effects on the recreation experience for unguided recreationists from commercial use would vary primarily from the commercial allocation levels which most influence the potential for perceptions of crowding and group size. Higher allocations allow a greater number of people, which increases the potential for crowding. The effects from all of the alternatives would be as anticipated in the Forest Plan. The more primitive recreation experiences anticipated by the Forest Plan would still be available under all alternatives. However, depending on the alternative chosen, these primitive experiences may be more difficult to find or occur in different locations.

The alternatives provide different ways to reduce the potential effects of commercial use on unguided recreationists. These include reduced allocations in Use Areas containing communities, restricting specific areas to commercial use, restricting large group use to specific areas, limiting commercial use in certain seasons, and limitations and restrictions to commercial use to reduce social conflicts. Restrictions

Large group areas were identified in some alternatives to reduce potential social conflicts.

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include the measures listed in Appendix C (Mitigation Measures) and measures found in Appendices A and B (Use Area and Large Group Area cards).

To reduce potential conflicts between guided and unguided users, some alternatives have lower commercial allocations in Use Areas containing communities compared to Use Areas without communities. Alternatives 2 and 4 limit commercial use in all Use Areas containing communities. Alternative 5 has fewer limits on commercial use in some Use Areas containing communities. Alternative 3 would not limit commercial use in Use Areas containing communities.

Large group areas were identified in some alternatives to reduce potential social conflicts. Commercial use was restricted in some locations across all action alternatives. In the relative ranking of restrictions placed on commercial uses, Alternatives 4 and 5 would be the most restrictive, followed by Alternative 2, and then Alternative 3.

Forest Service administrative oversight over outfitter/guides and self-regulation within the commercial recreation industry tend to reduce potential impacts on non-commercial use. In general, there is higher degree of regulation on commercial recreation than on unguided use, resulting in potentially fewer resource and social impacts based on a given amount of use. There is also the incentive for commercial outfitter/guides to strive to provide a safe, high quality experience for the clients in order to continue in business.

In summary, Alternative 4 would have the least potential to affect unguided recreationists. It has the lowest commercial allocation and would provide the most opportunity for solitude. It limits commercial use to about 10 percent of capacity in both the spring and fall season. Allocations in all Use Areas containing communities would be limited to less than 15 percent of the total carrying capacity. It has the fewest large group areas of the alternatives that provide them, and it has the lowest allocation of group days, which would reduce social conflicts.

Alternative 2 would have the second lowest potential to have effects on unguided use because it has the second lowest commercial allocation and potential for crowding. It has reduced allocations (from 10 to 30 percent of the total carrying capacity) in all Use Areas containing communities. It would limit commercial use to 10 percent of capacity in both the spring and fall seasons. However, Alternative 5 would be similar to Alternative 2 in terms of effects on unguided recreationists. Alternative 5 would have a slightly higher potential of crowding unguided use, although the total allocation and allocations in Use Areas containing communities are similar between the two alternatives. Alternative 5 designates areas for large group use, which could reduce potential effects of large groups on unguided recreationists by focusing use in these specific areas. Alternative 5 has reduced allocations for most Use Areas containing communities. Commercial use allocations would be limited to approximately ten percent during only the spring season under Alternative 5 to reduce perceptions of crowding.

Alternative 3 has the most potential to have effects on unguided use. It has the highest allocations with the highest potential for a sense of crowding. It designates the most areas for large group use. It does not reduce commercial allocations in Use Areas that contain communities and does not limit commercial use in the spring and fall seasons.

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Number of People Using Commercial Services to Access the National Forest

Not all people have the skills or equipment to participate in a particular activity or visit remote areas in the Tongass National Forest. Commercial outfitters and guides provide services that offer access, knowledge, and equipment to assist people who might otherwise be unable to recreate in their national forest. This analysis makes an estimate of the number of people who could use outfitter/guides to access the national forest if the full commercial allocation in each alternative were used. Assuming an average commercial group size of six people, Alternative 3 would allow up to 235,782 people to visit the national forest, followed by Alternative 5 with 105,180 people, Alternative 2 with 97,050 people, and Alternative 4 with 36,354 people over the three seasons. In comparison, approximately 15,500 visitors on average used commercial services annually during the period of 1999-2001.

Whether use reaches the levels identified under each alternative can only be estimated, as described earlier in this Chapter. Many factors will determine whether these levels of use are obtained. These factors are described further in Chapter 3 of the Tongass SEIS (2003) under the topics of Recreation and Tourism, and Economic and Social Environment.

Large Group Areas

The size of groups interacting in the national forest is an important part of the ROS social encounters setting indicator and has an effect on the perceptions of crowding and quality of the recreation experience.

The Forest Plan LUD and ROS provide guidelines for group size (See Table F-2 in Appendix F). Primitive ROS generally has a maximum party size of 12 people. Semi-Primitive and Semi-Primitive Motorized ROS generally have a maximum party size of 12 people in wilderness areas and 20 people outside of Wilderness LUDs. This size can be occasionally exceeded in limited locations outside of Wilderness LUDs. In this EIS, large group areas are defined as places where groups that exceed the usual group size of 20 people may occur in a Semi-Primitive ROS setting. The allowable large group size ranges from 21 to 75 people in these large group areas.

Group size was an important component in potential conflicts among guided groups and, between guided and unguided recreationists. Guided use generally occurs in groups larger than the non-guided. Commercial group size averages six people and approximately 90 percent of the groups are less than 21 people.

To address concerns over large group size and the need for areas where these large groups can recreate, the IDT developed two types of large group areas with guidance from the Forest Plan. The first is an area where large groups can occur on a regular basis, referred to as Enclaves in this analysis. The second type is an area where large groups can occur only on an occasional basis, called Fifteen-Percent areas because their use is limited to 15 percent or less of the primary use season. This equates to roughly one day per week. No large group areas were identified in Wilderness or Wild River LUDs or areas with Primitive ROS, as large group areas in these LUDs is inconsistent with Forest Plan direction.

Designating these large group areas not only identifies areas suitable for large group use but also notifies other recreationists that there is a higher probability of

No large group areas were identified in Wilderness or Wild River LUDs or areas with Primitive ROS, as large group areas in these LUDs is inconsistent with Forest Plan direction.

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encountering large groups in these areas. People can then avoid these areas if they are expecting a different recreation experience.

Large group areas are proposed in Alternatives 3, 4, and 5 (Table 3-17). Alternative 3 has 46 large group areas, with 33 Enclaves and 13 Fifteen-Percent areas. Alternative 5 has 36 large group areas, with 28 Enclaves and 8 Fifteen-Percent areas. Alternative 4 has 15 large group areas, with 12 Enclaves and 3 Fifteen-Percent areas. Alternatives 1 and 2 do not designate areas for large group use. Site-specific information and mitigation measures for each area are provided in Appendix B.

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Table 3-15. Proposed Enclave Areas in Each Alternative *

Type	Use Area	Name	Acres	Alt. 3	Alt. 4	Alt. 5
Enclave	01-01	Katzehin Falls	7	X		X
Enclave	01-02	Sullivan Mountain	235	X		X
Enclave	01-03	Cant Cove	38	X		
Enclave	01-03	Howard Bay	45	X		
Enclave	01-04C	Sunny Cove	66	X	X	X
Enclave	01-05B	Mallard Cove	96	X	X	X
Enclave	01-05B	No Name Cove	52	X	X	X
Enclave	01-05B	Williams Cove***	64			
Enclave	01-05B	Point Anmer	37	X		X
Enclave	01-05B	West Gilbert Bay	12	X	X	X
Enclave	01-05C	Fanshaw	48	X		X
Enclave	01-05C	North Windham Bay	12	X		X
Enclave	01-05C	Port Houghton	10	X	X	X
Enclave	01-05C	Sand Bay	59	X	X	X
Enclave	04-03	Dry Pass	476	X		
Enclave	04-03	Eagle River Road	251	X		X
Enclave	04-03	Noxon	203	X		
Enclave	04-04A	Lake Eva Trail	132	X	X	X
Enclave	04-04A	Point Elizabeth	72	X		X
Enclave	04-04A	Rodman Bay	252	X	X	X
Enclave	04-04A	Saook Bay	300	X		X
Enclave	04-04B	Hanus Bay	278	X		X
Enclave	04-04B	Portage Arm	424	X		
Enclave	04-08	Cordwood Creek	48	X		X
Enclave	04-08	Fowler Creek	42	X		X
Enclave	04-11	Eight Fathom Dock	110	X		X
Enclave	04-11	Kennel Creek	73	X		X
Enclave	04-11	Red Cliff Islands	119	X		X
Enclave	04-11	Salt Lake Bay Dock	91	X		X
Enclave	04-12	Corner Bay Road	398	X	X	X
Enclave	04-13	Sitkoh Bay Road	454	X	X	X
Enclave	04-15	Bohemia Basin	1,067	X		X
Enclave	04-15	Three Hill Island	362	X	X	X
Enclave	04-16D	George Island	188	X	X	X
Total Area in Enclaves (Acres)				6,057**	2,081	4,871**

*Alternatives 1 and 2 do not designate Enclaves.

**If Williams Cove Enclave is substituted for the No Name Cove Enclave, the total acres for the Enclaves will increase by 12 acres for each of these alternatives. Substituting Williams Cove for No Name Cove is driven by comments received to the Draft Shoreline EIS.

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Table 3-16. Proposed Fifteen-Percent Areas in Each Alternative *

Type	Use Area	Name	Acres	Alt. 3	Alt. 4	Alt. 5
15%	01-05B	Point Coke	22	X		X
15%	04-03	Fish Bay	701	X		
15%	04-03	Nadezhida Islands	222	X		
15%	04-04A	Duffield	223	X		
15%	04-04B	Bourbon Creek Road	346	X		
15%	04-11	Iyoukeen Peninsula	314	X		X
15%	04-11	Neka Bay North Bight	347	X		X
15%	04-11	Neka Bay South Bight	457	X		X
15%	04-13	Nismeni Point	144	X		X
15%	04-16A	Damp Marker	95	X	X	X
15%	04-16A	Pinta Cove	57	X	X	X
15%	04-16C	Big Shaw Island	57	X		
15%	04-16C	Fox Creek	417	X	X	X
Total Fifteen-Percent Acres				3,402	569	1,853

*Alternatives 1 and 2 do not designate any Fifteen-Percent Areas.

Table 3-17. Number and Acres of Large Group Areas by Alternative

Alternative*	Fifteen-percent areas		Enclaves		Total Large Group Areas	
	Number	Acres	Number	Acres	Number	Acres
3	13	3,402	33	6,057	46	**9,459
4	3	569	12	2,081	16	2,650
5	8	1,853	28	4,871	36	**6,724

* Alternatives 1 and 2 do not designate large group areas.

** If Williams Cove Enclave is substituted for the No Name Cove Enclave, the total acres for the Enclaves will increase by 12 acres for each of these alternatives. Substituting Williams Cove for No Name Cove is driven by comments received to the Draft Shoreline EIS.

Solitude

Solitude and the ‘Alaska’ wildland experience are important components of the recreation experience for both guided and unguided recreationists. Solitude is a social experience measured in terms of the expected number of groups encountered and the size of those groups. ROS and the Forest Plan define opportunities for solitude. Some people may have expectations of a recreation experience with fewer social encounters than the maximum recommended by the Forest Plan LUDs and ROS guidelines.

The opportunity for solitude for each alternative is measured by the total commercial allocation and seasonal allocations for each Use Area. Higher commercial use allocations increase the potential for encounters and reduce the opportunities for solitude. Conversely, lower allocations result in fewer commercial groups using an area, thereby providing more opportunities for solitude.

Opportunities for solitude as defined by ROS and the Forest Plan would be available over most of the analysis area in all alternatives at levels anticipated by the Forest Plan (See Tables 3-6 and 3-7). However, some Use Areas would have fewer opportunities for solitude during the summer season.

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None of the alternatives would have significant adverse effects on unguided recreationists over the analysis area as a whole, although individuals may not have the recreation experience they desire in all areas at all times.

Commercial use allocation is the primary way the alternatives affect the commercial recreation industry.

Allocations are also made by season. To address concerns about the various recreation activities in the different seasons and the need for more solitude for certain activities, three distinct seasons for recreation use were defined: spring, summer, and fall (see Introduction to this section for season dates). The allocations of commercial use for each Use Area vary among these seasons for the project alternatives. In some alternatives, the allocations are limited to about 10 percent of the carrying capacity in the spring and/or fall seasons to reduce the number of group encounters and allow for more opportunities for solitude for both guided and unguided users. (See Tables 2-2, 2-3, 2-6, and 2-9 to compare specific Use Area group days by season.)

Alternative 4 would likely provide the most opportunities for solitude because it provides the lowest commercial allocation to groups in all seasons. However, since there are fewer large group areas designated in Alternative 4 than in Alternatives 3 or 5, the result could be that use by large groups might disperse more across the landscape. While the dispersal of use might occur, it should also be noted that the total group day use for Alternative 4 allows for almost one-third the group day use as identified for Alternative 5 and less than one-fifth the group day use as identified for Alternative 3.

Alternative 2 would provide the second most opportunities for solitude in the spring and fall seasons because it provides the second lowest allocation and limits commercial use to about 10 percent of the carrying capacity. Alternative 2 provides the second highest number of group days for use in the summer season, which means it would have the second highest impact on solitude in all of the alternatives.

Alternative 5 may be comparable to Alternative 2 regarding impact to solitude because the total number of group use days for the summer season are similar. By having large group areas designated, smaller guided and unguided groups could avoid these locations, which might provide a higher degree of solitude. However, Alternative 5 is anticipated to have a larger impact to solitude in the fall since the group use level is more than double that identified for use in Alternative 2.

Alternative 3 provides the fewest opportunities for solitude because it provides the highest allocation of group days in all seasons.

Economic Opportunities and Potential Effects on Outfitter/Guide Businesses (Issue 2)

The effects on the recreation industry are displayed using both qualitative and quantitative measures. The following section begins with comparison of alternatives for the recreation capacity allocated for commercial use. The allocations are then compared to the average 1999 to 2001 commercial use levels. This section includes the allocations limiting current use; opportunities for industry to serve large groups; the types of recreation experience available to provide to the public; and the general effects of the alternatives on outfitter/guides.

Recreation Capacity Available for Commercial Use

The commercial use allocation is the primary way the alternatives affect the commercial recreation industry. Each action alternative makes an allocation of the recreation carrying capacity for commercial use. Alternative 1, the no-action alternative, does not make a specific commercial allocation, although commercial

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use could continue on a case-by-case basis up to 50 percent of the calculated recreation carrying capacity. Total commercial allocation, allocation by individual Use Area, and allocation by season vary among alternatives (Tables 2-1 through 2-3, Table 2-6, and Table 2-9, in Chapter 2). Alternative 3 would provide the highest total allocation with 39,297 group days, followed by Alternative 5 with 17,530 group days, Alternative 2 with 16,175 group days, and Alternative 4 with 6,059 group days (Table 3-12).

Quantity of Recreation Capacity Available Above Average Current Use (1999-2001)

To provide a comparison to the existing condition and a reference for the opportunities or impacts on commercial growth, the alternative commercial allocations are compared to average use levels for each Use Area and for the analysis area as a whole. The 1999 to 2001 commercial use information is the most current and complete data available. The potential economic effects and future levels of recreation use are estimates, not absolute values. These estimates depict the relative differences among alternatives. They are not meant to provide precise current or future market conditions.

If future use levels should reach the seasonal allocation in a Use Area, commercial use would be limited to the allocated level. To accommodate demand above allocations, outfitter/guides could choose to go to other areas. If demand continues to exceed allocations, commercial use would be allocated to outfitters/guides through a competitive special uses administrative process.

The action alternative allocations have the potential to create effects of crowding for guided use, or the use at these levels may limit the desirability of these areas, so commercial use could decline. The commercial allocations for each alternative are compared to 1999 to 2001 use levels in Table 3-18.

Estimates depict the relative differences among alternatives. They are not meant to provide precise current or future market conditions.

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Table 3-18. Total Commercial Allocation Compared to 1999-2001 Commercial Use Levels, by Alternative

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
Total commercial allocation available (Group Days)	2,500 to 40,658	16,175	39,297	6,059	17,530
1999 to 2001 Commercial Use (average group days)	2,500	2,500	2,500	2,500	2,500
Currently unused allocation	Up to 37,940	13,675	36,797	3,559	15,030
Percent of the alternative's average commercial allocation used from 1999 to 2001	NA	14%	6%	40%	13%

There is substantial room for industry growth beyond current average levels of use in all alternatives. Alternative 3 currently has the most unused total allocation available for growth, followed by Alternatives 5, 2, and 4.

The amount of use above the allocation would need to be dispersed to other areas with unused capacity. Use among qualified individual outfitter/guides in areas at capacity will be allocated through a competitive special use process. Unsuccessful outfitter/guides who were unwilling or unable to move operations to another area could lose business opportunities.

The amount of commercial use that is limited in individual Use Areas would be small relative to the total commercial use, even based on what is anticipated in the near future (Tongass SEIS 2003). Where commercial use reaches the allocation in specific Use Areas, there would be unused capacity available elsewhere in the analysis area. However, these alternate locations may not be as desirable. Alternate locations may not be as accessible or provide the same activities or quality of recreation experience. Consequently, the degree to which the displaced use affects individual outfitter/guides would depend on how well Use Areas can be substituted and the flexibility of outfitter/guide operations.

Economic activities and incomes can vary considerably between outfitter/guide operations. Certain locations are best suited for certain activities, such as wildlife viewing in areas where wildlife is abundant. Crowding, even if an area is not used to full capacity, may compromise the value of recreation activities. It is difficult to measure these effects numerically because of a lack of necessary data and accepted valuation techniques.

Use Areas Currently At, Near, or Over Seasonal Allocation

Commercial allocations may limit current use, future entry, and future growth of outfitter/guide operations in Alternatives 2, 4, and 5 in some seasons. Current (1999-2001) seasonal commercial use is approaching (within 20 percent), at, or exceeding the seasonal allocation for some Use Areas (see Tables 3-19 through 3-21). Alternative 2 has nine seasonal Use Areas where current use is at or near the

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seasonal allocation, followed by Alternative 5 with seven and Alternative 4 with six Use Areas where current use is at or near the seasonal allocation. Alternative 3 has no seasonal Use Areas at or near the allocation, and Alternative 1 does not make a specific capacity allocation.

Table 3-19. Alternative 2 Use Areas with Current Use Approaching (near 20%), At, or Over the Allocation, by Season

Use Area	General Location	Spring	Summer	Fall
04-05	SW Admiralty	Over		Over
04-06a	Pybus Bay	Over		
04-06B	Eliza Harbor	Over		
04-07	Gambier Bay	At		
04-10B	NW Admiralty	At		
04-13	Peril Strait	Over		
04-16A	Point Adolphus		Approaching	
04-16C	Idaho Inlet		Approaching	
Seasonal Total		6	2	1
Grand Total = 9 Seasonal Use Areas				

Table 3-20. Alternative 4 Use Areas with Current Use Approaching (near 20%), At, or Over the Allocation, by Season

Use Area	General Location	Spring	Summer	Fall
01-05	Tracy Arm		Approaching	
04-06a	Pybus Bay	Over		
04-06B	Eliza Harbor	Approaching		
04-12	Tenakee Inlet	Approaching		Approaching
04-13	Peril Strait	Approaching		
04-16A	Point Adolphus		Approaching	
04-16C	Idaho Inlet		Approaching	
Seasonal Total		4	3	1
Grand Total = 7 Seasonal Use Areas				

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Table 3-21. Alternative 5 Use Areas with Current Use Approaching (near 20%), At, or Over the Allocation, by Season

Use Area	General Location	Spring	Summer	Fall
04-06a	Pybus Bay	Over		
04-06B	Eliza Harbor	Over		
04-07	Gambier Bay	At		Approaching
04-13	Peril Strait	Over		
Seasonal Total		4	0	1
Grand Total = 4 Seasonal Use Areas				

None of the alternatives would limit current use in the analysis area as a whole. Under some alternatives, some Use Areas would have seasonal allocations that are less than current use.

In summary, none of the alternatives would limit current use in the analysis area as a whole. Some Use Areas where current use is over the seasonal allocation would now establish limits on commercial use. As tourism grows, the number of Use Areas with seasonal limits would also likely increase. Alternative 3 would provide the highest use levels and would not limit current use in any season in any Use Area. Alternatives 2 and 5 would have the next highest allocations and would limit current use in some Use Areas in some seasons. Alternative 2 would limit current use in four Use Areas during the spring, none in the summer, and one in the fall. Alternative 5 would be limit use in three Use Areas during the spring, but none in the summer or the fall. Alternative 4 would have the lowest allocation; it would limit use in one Use Area in the spring, but none in the summer or fall. If commercial use should continue to grow at historical rates, all the alternatives except Alternative 3 would have seasonal limits in some Use Areas.

Number and Type of Areas Designated for Large Group Use

Large groups are primarily associated with tour boats offering nature viewing recreation experiences. Many people use these tour boats to access the national forest, and demand for this type of recreation is increasing. Tour boats vary in size and passenger capacities; outfitter/guides offer recreation experiences for people in larger groups, generally ranging from 21 to 75 people. Most large group use occurs in the summer season. Time spent on the national forest is short (usually two or three hours) and activities are non-consumptive. Large group use occurs in relatively few areas of the national forest because the tour boat businesses providing these services are constrained by safe access points that can accommodate larger boats.

Large groups are defined as groups that exceed the generally allowed group size of 20 people in a Semi-Primitive ROS setting. The large group size ranges from 21 to 75 people. The upper limit of 75 people is used because it is a national threshold for unguided groups requiring special permits. The largest guided group reported on the national forest in the analysis area consisted of 70 people. Groups smaller than 21 people would also be permitted to use these areas.

Alternative 3 designates 46 large group areas (33 Enclaves, 13 Fifteen-Percent areas), followed by Alternative 5 with 36 large group areas (28 Enclaves, 8 Fifteen-

For large group areas in this EIS, large group size ranges from 21 to 75 people.

All the alternatives would provide the variety and type of recreation experience anticipated in the Forest Plan.

Percent areas). Alternative 4 designates 15 large group areas with 12 Enclaves and 3 Fifteen-Percent areas. Alternatives 1 and 2 do not designate areas for large group use (See Tables 3-15, 3-16, and 3-17).

Alternative 3 provides the most large group areas, allowing the most opportunity for growth and scheduling flexibility to businesses offering this type of recreation experience. Alternative 5 identifies the second most large group areas, which would provide somewhat less opportunity for growth and scheduling flexibility. Alternative 4 designates less than half of the number of large group areas than in Alternative 5.

Alternatives 1 and 2 do not designate areas for large group use. In these alternatives, businesses currently guiding large groups are limited in their group size by the ROS guidelines contained in the Forest Plan.

Amount and Type of Recreation Experience Available for Commercial Use

Outfitter/guides rely on a predictable quality of recreation settings to provide to their clients. Most forest visitors using commercial services expect a certain experience. All of the alternatives would provide the variety and type of recreation experiences anticipated in the Forest Plan. The spectrum of recreation opportunities currently available on national forest would be maintained. A variety of recreation experiences would be available for commercial use in the analysis area for all alternatives.

The recreation opportunity settings available for each Use Area for all alternatives are displayed in Table 3-6 and Table 3-7. A summary of the percent of the shoreline zone acres available in each ROS class for all the alternatives is shown in Table 3-13. A summary of the percent of the miles of shoreline available in each ROS class for all the alternatives is shown in Table 3-14. Approximately 38 percent of the shoreline zone will provide primitive recreation experiences while another 42 percent will provide semi-primitive recreation experiences at the levels of commercial use proposed by the alternatives, which will benefit the businesses with clients desiring those experiences.

In considering the amount and type of recreation experience available for commercial use, Alternative 4 would provide the most opportunities for more primitive recreation experiences because it has the lowest allocation, followed by Alternatives 2 and 5 with similar allocations, and Alternative 3 with the least opportunity for primitive experiences because it has the highest allocation. Alternative 1 does not make a specific allocation for commercial recreation use and use would grow as areas are analyzed on a case-by-case basis. Without a set allocation, changes to the experience would vary depending on the areas that may need to be analyzed.

Outfitter/Guide Business Benefits

The outfitter/guide industry generally desires business stability and sustainability and would prefer to reduce uncertainty in the future.

All the action alternatives would make commercial allocations that would allow some level of certainty to business by providing a predictable supply of group days in the future. They also would provide a predictable type of recreation setting (as defined by the Forest Plan and ROS classes) to enhance business stability and

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sustainability. When the recreation experience meets expectations client satisfaction remains high.

Each action alternative would provide a commercial use allocation that would sustain current business levels and provide potential for growth for the industry. However, levels of commercial capacity allocated by these alternatives may limit future entry or growth of outfitter/guide operations in the future in some Use Areas and some seasons. The action alternatives would allow the Forest Service to issue priority use permits of up to five years in length, with an opportunity for renewal based on performance.

Alternative 1, the no-action alternative, does not make a specific commercial allocation but considers permit authorizations on a case-by-case basis; therefore it does not provide a degree of certainty for business growth. The Forest Service would issue temporary (annual) outfitter/guide permits rather than long-term permits. Businesses would not have an opportunity to obtain a priority use permit until after the completion of additional analysis to determine the effects of allowing that action. Current limits for specific areas and activities would remain in effect until they could be addressed in a separate analysis. This could cause fewer opportunities for business growth.

Conflicts within the Commercial Recreation Industry (Issue 3)

There is a broad diversity in the types, sizes, and recreation activities of businesses involved in commercial recreation. Some of the differences can lead to conflicts among the different commercial recreation businesses. Conflict within the recreation industry often revolves around social interactions and expectations for recreation experiences. Outfitter/guides often desire to offer the same or overlapping recreation experiences, and some recreation activities may not be compatible when they occur within close proximity to each other. The alternatives provide different allocations, strategies, and measures to reduce potential conflicts within the recreation industry.

Allocation of Recreation Capacity to Commercial Uses

Each action alternative makes an allocation, in group days, for each Use Area for commercial recreation use. The allocations are a method to reduce conflicts by managing the recreation use levels for the experiences expected in the Forest Plan. The allocations provide different levels of use, which may result in different perceptions of crowding. In general, higher allocations will result in higher use levels, which will provide more opportunities for groups who are not seeking high degrees of solitude. The lower allocations will allow less commercial use resulting in fewer group encounters and less chance for conflicts between groups. Total commercial allocation and the allocation by individual Use Area and season vary by alternative (See Tables 2-1 through 2-3, Table 2-6, and Table 2-9 in Chapter 2).

Alternative 3 makes the highest total allocation of 39,297 group days, followed by Alternative 5 with 17,530 group days, Alternative 2 with 16,175 group days, and Alternative 4 with 6,059 group days (Table 3-12). Alternative 1, the no-action alternative, makes no commercial allocation making industry conflicts harder to resolve.

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Allocation of Recreation Capacity by Season

Many types of outfitter/guides have specific needs and requirements to serve their clients. Some outfitter/guide activities are more sensitive to crowding. Big game outfitter/guides have a limited timeframe in which to operate (spring and fall hunting seasons) due to state game regulations, and they require solitude and large areas in which to operate for successful hunts. Other types of outfitter/guide activities not constrained by regulatory seasons are expanding their use into the spring and fall ‘shoulder seasons’ and overlapping with the current big game hunting operations. This may decrease hunting opportunities, hunting success and decrease in customer satisfaction.

All the action alternatives manage recreation use by season, which helps to reduce the potential for conflicts.

All the action alternatives manage recreation use by season, which helps to reduce the potential for conflicts among different types of commercial recreation activities. Seasons were established for all the action alternatives to bracket the hunting seasons and the primary summer use season (see Table 3-2). Alternative 1 does not establish recreation management seasons and would limit expansion of use on a case-by-case basis throughout the analysis area. Limits on commercial allocations in specific seasons can reduce conflicts between different commercial recreation activities by reducing the overall commercial activity and thus reducing the number of commercial groups that might interact with each other. This decreases commercial use and provides more opportunities for solitude for those types of activities such as big game hunting and other businesses that seek more space and solitude (although competition for limited commercial use in these seasons may increase). It also serves to reduce the sense of crowding.

Alternatives vary in their commercial allocations in the different seasons. Some alternatives limit commercial allocations in the spring and/or fall season. Opportunities for growth into ‘shoulder seasons’ will be limited. All action alternatives would provide higher allocations in the summer, the primary recreation use season.

Alternatives 2 and 4 have the greatest limits to seasonal use by limiting the commercial allocation to approximately 10 percent of the carrying capacity in both the spring and fall seasons. Alternative 5 would limit the commercial allocation to approximately 10 percent of the carrying capacity in only the spring season. Alternative 3 does not provide limited seasonal allocations in the spring or fall. Alternative 1 does not make seasonal commercial allocations.

Management of Activity, Group Size and Seasonal Use to Reduce Industry Conflicts

The alternatives also address conflict potential between outfitter/guide businesses through their design and mitigation measures. Management measures were developed to reduce potential conflicts between outfitter/guides on National Forest System lands. The State of Alaska issues licenses to non-Forest Service permittees who operate below mean high tide, on state and private lands. Though these activities may potentially cause conflicts with permit holders using National Forest System lands, they are not within the jurisdiction of the Forest Service. Many of these management measures serve to reduce potential conflicts between commercial and non-commercial users. Management measures could include limits on group size, the number of groups in an area at one time, seasons of use, length of stay

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limits, methods and restrictions on access, and mitigation measures to reduce social conflicts. Most management measures apply to all action alternatives.

Access methods are specified to reduce conflicts in the action alternatives. Helicopter and commercial OHV use would not be authorized in any alternative. Currently there is no commercial use of helicopter or OHVs within the project area so this would be the same for Alternative 1. Wheeled plane access is allowed at varying levels in some alternatives for Neka Bay within the Hoonah Use Area (04-11) and Mud Bay in the Mud Bay Use Area (04-16B).

There has been periodic use of wheeled planes by guides to access Neka Bay and Mud Bay on northern Chichagof Island. Unguided recreationists also use wheeled planes to access these locations. The concern about this area is that landings are causing rutting to the beach area and damage to herbaceous vegetation. Also, the interagency Brown Bear Management Team (BBMT) has identified this area as a potential Tier 1 area. The BBMT recommended preventing access by airplanes to reduce disturbance to brown bears in this area.

Considering wheeled plane access in this analysis provided an opportunity to review feedback from the public as to whether this type of guided use should continue. Access to this area is also provided by floatplane and boat. A decision to prohibit use of wheeled planes by guides in this location will have no bearing on access to this location by the general public via wheeled plane.

Two different guides provided wheeled plane access to this location in previous years. The effects of wheeled airplane use are evident on beach grasses. Wheeled airplane use was considered in Alternatives 2, 3, 4, and 5.

When discussing all alternatives in relation to each other for potential for effects to resolving conflict, the alternatives with the higher levels of use are more likely to result in a greater potential for conflict. Alternative 3 would provide the highest amount of use during all seasons and therefore would have the highest potential for conflict. Alternatives 2, 4, and 5 would provide lesser allocations especially during the spring and fall hunting seasons. Alternative 4 would have the lowest potential for conflicts since it has the lowest total and seasonal allocations.

Alternatives 2 and 5 would have the same potential for conflicts during the spring since Use Area allocations would be the same (Tables 2-2 and 2-9). However, the potential for conflicts would be higher during the fall season under Alternative 5.

Alternatives 3, 4, and 5 would limit group size in the large group areas to a maximum of 75 people, and only one large group would be allowed in an area at a time to limit the social impacts on other large groups and other users.

Alternative 1 does not provide specific measures to reduce conflict between outfitter/guides. Measures could be developed on a case-by-case basis.

Also see Appendix C (Mitigation) for specific information on measures to reduce conflict between outfitter/guides.

Designation of Large Group Areas

Group size is an important component in assessing potential conflicts between outfitter/guides. Large groups are primarily associated with the tour boats in the

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project area. Businesses serving large groups, such as the tour boats, are often seen as detracting from the recreation experience provided by outfitter/guides serving smaller groups.

However, outfitter/guides serving larger groups in primitive ROS settings are also limited by group size restrictions as to where they can go in many LUDs. In a primitive ROS setting, a large group must break into groups of 12. They are also physically limited by the requirements of their larger boats. Rough rocky coastlines with relatively few safe anchorages limit the number of locations from which larger tour boats can provide their clients with access to national forest.

To address the concerns over (a) the need for areas where tour boats can go with large groups and (b) potential conflicts between small and large group sizes, two types of large group areas are proposed: Enclaves and Fifteen-Percent areas. These large group areas accomplish several objectives. They serve as areas where businesses can provide services to people preferring to recreate in large groups. They also identify areas where other outfitter/guides can expect seeing large groups. If desired, they can avoid these areas if they wish for a different recreation setting for their clients. Large group areas also serve to concentrate large groups and their associated resource impacts into specific areas of the forest. Designating large group areas thus would reduce the potential for conflicts by accommodating recreationists in large groups at appropriate sites. Large groups may visit areas on national forest outside of these Enclaves and Fifteen-Percent Areas; however, when visiting other locations on the national forest, groups would need to conform to the ROS size guidelines, or would be required to break into smaller groups.

Alternatives 3, 4, and 5 identify specific areas where outfitter/guides may guide large groups (see Table 3-17). These large group areas also have restrictions to reduce conflicts between outfitter/guides. Groups in these areas are limited to 75 people. Only one large group can be in an area at a time to limit the social impacts on other large groups and other users. In addition, in some alternatives, large groups can use the Fifteen-Percent areas only during the summer season. Site-specific information and mitigation measures for each area are provided in Appendix B.

Alternative 3 provides the most large group areas: 46, with 33 Enclaves and 13 Fifteen-Percent areas; followed by Alternative 5 with 36 large group areas (28 Enclaves and 8 Fifteen-Percent areas); and Alternative 4, with 15 large group areas (12 Enclaves and 3 Fifteen-Percent areas). Alternatives 1 and 2 do not identify areas for large group use. Currently large groups use the shoreline at several locations such as Williams Cove, Kelp Bay, Lake Eva, and George Island. Much of the discussion regarding large groups and their effect on the landscape is included under the topics of ROS class, Solitude, and Large Group Areas.

Cumulative Effects

Two sources of future recreation trends for Alaska and the nation are the Chugach Land Management Plan Revision (2002) and the Tongass SEIS (2003). The studies cited in these plans predict an increase in recreation participation for all recreation activities, due both to an increase in the population and to an increase in the rates of per capita participation. Alaskan recreation participation is expected to increase at least at the rate of population growth. Activities may change as the population changes with age and other demographics. The rate of recreation growth is declining

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for visitors to Alaska when compared to the growth over the past decade. Past trends may not be indicative of the future as recreation is influenced by many factors including technological changes, fuel prices, and general economic trends.

Many of the cumulative effects were analyzed at the Forest Plan level when recreation levels and effects were determined. Forest development is progressing at lower rates than predicted in the Forest Plan, so changes from the Semi-Primitive ROS to the more developed ROS classes are not occurring at the levels anticipated in the Forest Plan.

Recreation use levels on the Petersburg and Wrangell Districts to the south of the analysis area are occurring within the limits established under a separate analysis. The effects of this decision are not expected to change recreation use on the national forest adjacent to the analysis area.

Non-national forest land is scattered throughout the analysis area. Many of the cumulative effects would involve the current and future use of these lands and their influence on the shoreline zone. Some of these public lands, such as national and state parks, are specifically managed for recreation while others are managed for multiple uses including recreation.

Glacier Bay National Park and Preserve has a large influence on recreation use patterns, especially along the national forest shoreline along Icy Straits. This park serves as a primary attraction to the area, and much of the use on the national forest is peripheral to use in the national park. Recreation management strategies within the national park have a direct effect on the surrounding areas. For example, commercial fishing bans within the national park have displaced those boats into the surrounding waters, increasing boat traffic and fishing activities in other areas adjacent to the shoreline. Visitor limits into the national park displace visitors to areas surrounding the park. Boat entry limits often involve boats gathering up at the entrance waiting to obtain a permit to enter the national park; these boats will often visit the national forest as they wait. Future Park Service plans are to keep visitor levels at the current level or decrease them. If permitted use levels do not meet the expected increase in recreation demand, some of that demand will be supplied by visits to the national forest shoreline zone. Two other small national parks, the Sitka Totem Park and the Klondike Park, lie within the analysis area. These are also major visitor attractions but they have little influence on the adjacent national forest.

The State of Alaska has identified 10 areas as marine parks within the analysis area, which are specifically managed for recreation. Most of the other adjacent state land is managed for multiple-use, including recreation. There has been participation between the State and Federal agencies in the development of management plans to avoid conflicts between the different agencies objectives. No restrictions or development affecting recreation are anticipated on these state lands in the near future based on the Alaska Department of Natural Resources (DNR) Northern Southeast Area Plan (NSEAP). Outfitter/guides authorized to use National Forest System lands must acquire any permits or approvals from other landowners prior to the commercial use of those lands.

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Much of the private land scattered throughout the analysis area, including Alaska Native corporation lands, could be developed for recreation. There are at least six existing remote lodges and several areas have been proposed as possible lodge sites, including Hobart Bay and Excursion Inlet.

The Forest Service does not authorize use of private lands and permission for use of these lands by an outfitter/guide must be documented before use. There are inholdings scattered throughout the forest that could be influenced by the adjacent use by outfitter/guides and the allocation of commercial recreation use by each alternative. However, all alternatives provide for a level of activity consistent with the Forest Plan for each specific LUD. There are no “buffers” provided between private lands and use of National Forest System lands.

As mentioned previously, a new recreation development at Point Sophia near Hoonah may have a significant effect on recreation opportunities in that area. Currently the Hoonah District Ranger is working with the owners of this company to consider any uses of the National Forest. It is anticipated that the alternatives presented in this analysis can accommodate a request for increased use of National Forest system lands near this development

Additional recreation development on private lands in the future would likely increase recreation use on adjacent national forest. Additional development and a proposed ferry terminal at Berners Bay would also change recreation use patterns in Lynn Canal, as would changes to the southeast Transportation Plan as proposed by the State.

Socioeconomics

Introduction

The central characteristic of all the alternatives is that they manage commercial recreation activity or tourism (the terms are used interchangeably in this section) to a greater or lesser degree. This recreation activity, in turn, can affect local communities and economies in various ways. The ability of tourism to directly affect local employment by supporting outfitter/guides and related jobs is a major impact that is considered in this section. The impact of tourism activity on recreation opportunities for local residents (an essential amenity for many Alaskans) is also important. However, this impact would occur not so much through the physical alteration of the landscape as through the perceived quality of recreation experiences, particularly those changes resulting from crowding. Finally, growth in tourism in communities whose economies have historically been tied to traditional resource extraction activities may result in considerable changes in social structure and the local distribution of wealth (Cerveney, in press).

The Shoreline Outfitter/Guide EIS is limited to the management and allocation of commercial guiding activities in the shoreline zone of four Ranger Districts in the northern portion of the Tongass National Forest. The following discussion concentrates mainly on the socioeconomic aspects of recreation and tourism within this analysis area. However, the issues dealt with here occur within a broader context of the entire region, and their importance extends beyond recreation and tourism concerns. Where necessary this broader context will be considered, but in a limited way. For more information on the overall socioeconomic conditions in Southeast Alaska, see the analysis completed for the Tongass SEIS (2003).

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The following affected environment segment begins by introducing the communities within the analysis area, followed by a description of important regional economic trends. The role of outfitter/guides in the recreation and tourism industries follows. The affected environment concludes with a discussion of the social effects of increasing commercial recreation use levels. These discussions help provide a foundation for the socioeconomic effects analysis that concludes this section.

Affected Environment

Community Profiles

The following community profiles display information related to recreation (Alaska Division of Community and Business Development 2001). The description of Baranof Warm Springs was provided, as it was not addressed in other literature.

Juneau, the state capital, is the largest community in the analysis area (population 30,711) and a center for recreation use by both local residents and out-of-state tourists. Tourism is a significant contributor to the local economy during the summer months, providing nearly 2,000 jobs and \$130 million income. More than 683,000 passengers visited Juneau during 2001 from 539 cruise ship dockings, bringing over \$80 million into the local economy. Mendenhall Glacier, Juneau Icefield air tours, Tracy Arm, and the new Mount Roberts Tram are local attractions. Juneau is accessible only by air and sea. Scheduled jet flights and air taxis are available at the Juneau International Airport. Marine facilities include a seaplane landing area in Juneau Harbor, two deep draft docks, five small boat harbors, and a state ferry terminal. The Alaska Marine Highway System and cargo barges provide year-round services.

Sitka is the second largest community (population 8,835) and is a common stop for out-of-state visitors. Sitka is a port of call for many cruise ships each summer whose passengers bring over \$11 million into the local economy. Daily jet service is provided, and several scheduled air taxis and air charters are available. The City and Borough of Sitka operate five small boat harbors with 1,350 stalls, and a seaplane base. There is a breakwater at Thompson Harbor, but no deep draft dock. Cruise ships anchor in the harbor and lighter boats bring visitors to shore. The Alaska Marine Highway system operates a ferry terminal.

Baranof Warm Springs (population 15) is situated at the Northwest end of Warm Springs Bay on the Eastern shore of Baranof Island, 20 air miles East of Sitka. This area was first settled in the early 1900's and formalized as a Townsite just prior to Alaska's statehood. Part of the City and Borough of Sitka, it is primarily a seasonal recreation area with approximately 15 full time residents during the Summer months and nearly 25 additional part time residents. In addition, a 1996 survey of visitors indicated that nearly 60 additional persons stay in the bay per day arriving by either boat or plane. The community and the surrounding National Forest and State lands provide a variety of recreational activities including hiking, saltwater and freshwater fishing, boating, and natural hot springs. Geographical features such as Baranof Lake and the Baranof River waterfall are also attractions. The State of Alaska maintains a 300' boat and float plane dock, which draws in a number of transient pleasure boats and commercial fishing boats.

Port Alexander (population 81) is one of the smallest communities in the analysis area. Commercial fishing and subsistence uses of marine and forest resources constitute the economic base. Transportation is by floatplane and boat, with a state-

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owned seaplane base available. Passengers can fly on the mail floatplane from Sitka or can charter flights from Sitka, Petersburg, Wrangell, and Juneau. Other facilities include a breakwater, dock, and small boat harbor for moorage. There are no roads; skiffs are used for local transportation.

Hoonah (population 860) is the largest Tlingit village in Alaska. Many residents maintain a subsistence lifestyle that includes hunting, fishing, and gathering edible plants and berries. The state owns and operates an airport and a seaplane base that are served by scheduled small aircraft from Juneau. A state ferry terminal and harbor/dock area is available. A private development at a remodeled cannery will accommodate cruise ships beginning in 2004. There is an extensive road system on northwest Chichagof Island.

Angoon (population 572) is the only permanent settlement on Admiralty Island. Angoon is a Tlingit village with a commercial fishing and subsistence lifestyle. It is accessible only by floatplane or boat. Scheduled and charter floatplane services are available from the state-owned seaplane base on Kootznahoo Inlet. Angoon's facilities also include a deep draft dock, small boat harbor, and state ferry terminal.

Pelican (population 163) is a fishing community, and most residents are commercial fisherman or fish processing workers. Pelican is dependent on boats, float planes, and the state ferry for access. Daily scheduled air taxi services are available from Juneau and Sitka. Facilities include a state-owned seaplane base, a small boat harbor, dock, and state ferry terminal. There is limited ferry service.

Elfin Cove (population 32) is a fish-buying and supply center for fishermen. Residents participate in commercial fishing, sport fishing, and charter services, so the economy is highly seasonal. Summer lodges and local retail businesses also provide employment. A state-owned seaplane base is available, with skiffs acting as the primary means of local transportation.

Tenakee Springs (population 104) has long been considered a retirement community and summer retreat for Juneau and Sitka residents, with few opportunities for local employment. While fish processing had historically been a mainstay of its economy, tourism is increasing in importance. Tenakee Springs is dependent on seaplanes and the Alaska Marine Highway for transport. The city owns a seaplane base and heliport, and scheduled or chartered floatplanes are available from Juneau. The state ferry provides passenger transportation only, since there are no vehicle-landing facilities or local roads in Tenakee. The marine facilities include a small boat harbor and ferry terminal. There is a three-mile-long main street. Local transportation is primarily by bicycle or OHV.

Haines (population 1,811) is a northern terminus of the Alaska Marine Highway System, a cruise ship port-of-call, and a hub for transportation to and from Southeast Alaska. Many jobs are seasonal, with tourism businesses and access to the interior Alaska Highway system becoming increasingly important. Haines is a major transshipment point because of its ice-free, deep-water port and dock, and year-round road access to Canada and interior Alaska. Air service is provided daily via the Haines airport and seaplane base.

Skagway (population 862) is a port of call for cruise ships and a transfer site for interior bus tours. In 1999, 430,000 cruise ship passengers brought \$60 million into

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the local economy; more than 150,000 independent travelers visited Skagway. The Klondike Gold Rush National Historic Park is a major attraction. The White Pass and Yukon Railroad is open seasonally, providing tours. The Klondike Highway and Alaska Highway provide a connection to British Columbia, the Yukon Territory, and the lower 48 states, or north to interior Alaska. Skagway is accessed by air, road, water, and rail services. The state owns the airstrip and seaplane base at the boat harbor, with scheduled air taxis. Skagway receives regular state ferry and barge services. A protected small boat harbor, boat launch, and boat haul-out are also available.

While not within the project area, the following two communities are affected by this analysis, as there is some reliance on the project area either for subsistence or support of current outfitting or guiding businesses;

Gustavus (population 429) is located near the entrance to Glacier Bay National Park and Reserve and attracts a number of tourists and recreation enthusiasts during the summer months. Gustavus offers a state-owned airport with jet capability. Floatplanes land at nearby Bartlett Cove. Air traffic is relatively high during peak summer months, and several cruise ships include the Glacier Bay in their itinerary. There is a 10-mile local road connecting Bartlett Cove with the airport. Regulations limit the number of boats entering Glacier Bay between June 1 and August 31. Persons from Gustavus use portions of the project area for their recreation use and subsistence gathering. Also, there are outfitters and guides who use National Forest System lands who have businesses originating from this community.

Kake (population 710) is just south of Admiralty Island located on the west side of Kupreanof Island. The Kake economy is primarily based on timber and fishing industries. The community has used southern Admiralty Island, the southeast side of Baranof Island, and the mainland near Hobart Bay extensively for subsistence activities over the years.

Petersburg and Kupreanof (population of Petersburg is 3,224 and Kupreanof is 23) Petersburg is located on the northern tip of Mitkof Island with Kupreanof (a second class city) located just west of Petersburg on Kupreanof Island. Kupreanof is economically tied to the community of Petersburg, where most residents find employment, purchase goods, and attend school). The economy is primarily based on the commercial fishing and timber industries. While there is no deep-water dock suitable for large cruise ships, there is independent sportsmen and tourist visitation, which do make some use of the project area. Like with persons from Gustavus, people from Petersburg and Kupreanof use portions of the project area for their recreation use and subsistence gathering. Also, there are outfitters and guides who use National Forest System lands who have businesses originating from Petersburg.

General Discussion of Affected Environment

Southeast Alaska can be generally characterized as being sparsely populated with isolated communities. The Alaska State ferry system transports people and vehicles between several ports in Southeast Alaska, and Prince Rupert British Columbia, and Bellingham, Washington. Haines and Skagway, at the northern end of the forest, offer access to the interior and Southcentral Alaska via the Alaska Highway and to Canada via the Cassiar Highway. Juneau, Petersburg and Sitka are the only

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communities in or near the project area with year-round scheduled jet service. Gustavus receives some jet service during the summer season.

The overview of the social and economic conditions in Southeast Alaska provides a baseline against which the potential effects of the proposed alternatives are measured. The Tongass National Forest plays an important role in the formal and informal economies of Southeast Alaska. The formal economy includes those economic activities that are recorded in official statistics. The informal economy includes activities that are not typically recorded in official statistics. Elements of the informal economy include subsistence activities, in-kind contributions, non-cash income, unpaid labor and labor exchanges, and care-giving to the young and old.

Recreation and tourism are heavily represented in the economy of Southeast Alaska. Recreation and Tourism-related activities are distributed over a number of standard economic sectors, mainly retail trade and services. The percent of the total workforce that is self-employed in Southeast Alaska is higher than the national average, 26 percent compared to 17 percent. Much of the self-employment in Southeast Alaska is likely associated with the retail and services sectors and sensitive to recreation and tourism activity.

Growth in employment opportunities between 1990 and 2000 was lower than the national average, as was growth in the local population. Much of the job creation that occurred in the region was in the lower paid retail and service sectors, resulting in a steady eroding in average wages and the contribution of job-related earnings to per capita income. Although per capita income in Southeast Alaska remained fairly constant over this period, it experienced a relative decline compared to the national average, decreasing from 28 percent higher than the national average in 1990 to just 6 percent higher in 2000.

In 2001, direct employment in natural resource-based industries accounted for approximately 21 percent of the total employment for Southeast Alaska. Recreation and tourism accounted for just over half (51 percent) of the direct resource-dependent employment, with wood products accounting for just 9 percent. In 1995, recreation and tourism and wood products accounted for 34 percent and 24 percent of direct resource-dependent employment, respectively. Total direct resource-dependent employment remained fairly constant between 1995 and 2001, decreasing slightly from approximately 8,700 to 8,400 employees. Wood products employment declined significantly over this period, decreasing from approximately 2,100 to 800 jobs. Employment in recreation and tourism increased over this period, but the large relative gain between 1995 and 2001 is also partly a result in a change in measurement. The 1995 estimate was based on estimates of visitation to the Tongass and does not include the economic contribution of tourism activities that cannot be measured in visitor days. The recreation and tourism economy show a high degree of seasonal variation.

Recreation and Tourism

Recreation and tourism within Southeast Alaska has increased significantly over the past decade. Nonresident recreation and tourism accounted for an estimated 4,300 jobs in Southeast Alaska in 2001 (direct employment only). This figure comprised approximately 11 percent of total employment in Southeast Alaska in 2001 and was

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the largest resource-dependent sector in terms of total direct employment and earnings.

A distinction is made between resident recreationists and nonresident visitors for the purposes of this analysis because significant differences exist between these groups. Surveys indicate that visitors are generally older, often purchase package tours, use many expensive services, and spend relatively little time in remote settings while in Southeast Alaska. This is typically the case with cruise ship passengers, who presently comprise a majority of visitors to the region. The distinction between resident recreationists and nonresident visitors is also important from an economic impact assessment perspective. Jobs generated by nonresident expenditures on goods and services are considered comparable to an export industry that brings new money into the region, creating new wealth and development opportunities. Multipliers are used to analyze the impact of “new” money coming into the regional economy. Expenditures by local residents represent a recirculation of money that is already present in the regional economy and are, therefore, not typically identified as “new” money. That is not to say, however, that resident recreation-related economic activity does not contribute to the regional economy. If residents are substituting local recreation for non-local recreation then their money can be considered to be money that would otherwise not be present in the local economy. The extent to which this is the case can only be identified by surveying local residents and asking detailed questions about their substitution decisions with respect to Tongass-based recreation.

Visitor data compiled for Alaska in 2000/2001 as part of the fourth Alaska Visitors Statistics Program (AVSP) indicated that there were more than 1,010,000 summer visitors to Southeast Alaska, approximately twice the number of visitors that were identified during the third AVSP in 1993/1994. Statewide increases in cruise ship passengers accounted for 77 percent of the growth over this period, with the number of cruise ship passengers to Juneau increasing from 306,600 in 1993 to 632,000 in 2000.

The 1993 AVSP found that package visitors accounted for 67 percent of visitors to Southeast Alaska, with independent visitors accounting for 33 percent. This study found that the vast majority of visitors to the region travel by cruise ship, with domestic air the second most frequent mode of travel, highway third, and ferry fourth. The relative percentage of independent visitors versus package visitors appeared to be increasing and identified as more likely to be employed, and thus spend less time in the state than their older counterparts. They were also likely to demand more action and activity-oriented products, such as wildlife viewing and independent travel options.

The 2001 AVSP found that 44 percent of summer visitors to Alaska were package visitors. Independent visitors accounted for 30 percent of total statewide visitation, with “inde-package” visitors comprising the remaining 27 percent. Visitors were classified as Independent if they did not plan to purchase any type of commercially available tour. Inde-package visitors were those visitors who were traveling independently but indicated that they planned on purchasing a tour of some kind. The percentage of visitors who were employed increased from 56 percent in 1993 to 62 percent in 2001. Comparable age data were not available for 1993 and 2001 so it is not possible to identify any trend in the age of visitors over this period.

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Approximately 35 percent of visitors to Alaska in 2001 were repeating visitors and 59 percent visited for seven days or less.

While it is reasonable to assume that the vast majority of the recreation and tourism activity in the region is related to the natural environment, not all of the activity generating this employment can be directly linked to the Tongass National Forest. Many visitors experience the Tongass passively, from the deck of a cruise ship, for example, without directly using the forest for recreation purposes. However, cruise ships have heavily marketed Forest-related activities in recent years and many passengers do take at least one trip to the Forest during their visit. A 2000 survey of commercial recreation businesses that use the public lands and waters of Southeast Alaska found that cruise ship passengers accounted for 1 percent of total clients, ranging from 22 percent of clients for businesses with fewer than 200 clients a year to 91 percent of clients for businesses with more than 10,000 clients a year.

Regional Economic Trends

Projections provided in the Tongass SEIS (2003) assume that recreation use/projected demand will continue to increase on an annual basis. Numerous factors will affect future demand for recreation. These include general economic trends, trends in public tastes, changes in relative costs (airfares to Juneau or Sitka for example), and temporary factors, such as weather, gasoline shortages, ferry strikes, and other local, national, and international factors.

There are a number of indirect measures that shed some light on recent trends. These include indirect measures of visitors to the region. For example, the volume of cruise ship passengers visiting Juneau increased by 69 percent between 1995 and 2000 (from 380,529 to 632,000). As discussed previously, cruise ship passengers comprise the majority of visitors to the region. Independent visitors, in contrast, appear to have stayed relatively constant over this period. The number of Juneau airline departures increased slightly between 1995 and 1999, arrivals by road stayed relative constant in both Haines and Skagway, and the volume of Southeast Alaska State Ferry passengers was about 9 percent lower in 2000 than it was in 1995.

The 2000 Southeast Alaska commercial recreation survey found that 73 percent of the businesses surveyed had experienced an increase in the number of clients served since 1995. Outfitter/guide use information compiled from the shoreline areas within this project area from 1994 to 1999 shows a dramatic increase in outfitter/guide use, with the number of clients increasing from approximately 1,550 in 1994 to 14,096 in 1999.

Recreation, Tourism, and Outfitter/Guides

Providing an adequate description of the tourism industry in general, and the outfitter/guide sector in particular, is complicated by a number of factors. First is that the standard employment and income statistics do not identify a tourism sector per se, because much of the money spent by tourists goes to establishments (such as restaurants and hotels) that also serve other visitors or local residents. It is not possible to directly measure on a regular basis the amount of activity attributable to tourism in these sectors. Other establishments (a lodge for example) primarily serve visitors, but they are commonly combined with other types of businesses to meet the needs of their customers. Not all lodge visitors will take advantage of outfitter/guide opportunities and not every outfitter/guide will use the National Forest to

The largest and fastest growing element of recreation and tourism in Southeast Alaska is the cruise ship industry.

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accommodate customers (whale watching, viewing glaciers, etc). These problems are further compounded by the fact that at the local level, and especially in sparsely populated areas; statistics for many sub-sectors are routinely unavailable to protect the privacy of individual establishments. Consequently, the standard set of employment and income statistics used in economic analysis are inadequate in measuring and tracking overall activity in the commercial recreation sector. However, other less direct information sources are available.

The largest and fastest growing element of recreation and tourism in Southeast Alaska is the cruise ship industry. One estimate places the total number of visitors coming to Southeast Alaska by cruise ship in 2000 at 632,000, or slightly more than eight visitors for every Southeast Alaska resident and well over twice the 235,000 cruise ship passengers reported to have visited Southeast Alaska in 1990 (Schroeder et al. in press, McDowell Group 2000). This number accounts for over three-fourths of the estimated total of 832,000 tourists visiting the region in 2000, and its growth is equivalent to an 11 percent annual growth rate (resulting in a doubling every six to seven years). Whether this expansion can continue, however, is open to question, and anecdotal evidence suggests that total tourism growth in Alaska may be slowing (Colt et al. 2000).

Implications of Expanding Activity

The magnitude and rapid growth of the cruise ship industry has important implications for recreation planning. Shore excursions have become an integral part of the cruise ship experience, providing increased revenues for ship operators and opportunities for local entrepreneurs. This activity has been concentrated at major ports of call (such as Ketchikan, Juneau, or Skagway) and does not occur in the shoreline zone. Alongside the international cruise lines, however, several tour boat operators are active in the region, often taking their customers to places bypassed by the larger ships. To the extent that it occurs on the national forest, this activity could be affected by alternatives and the potential for crowding. Likewise, if growth in large cruise ship activity continues at its current rate, then limited capacity and crowding may force certain cruise lines to diversify their activities and locations, making greater use of the forest-based recreation use capacity in the analysis area. Growth in the tour boat industry may provide some indication of growth trends for independent visitors to Southeast Alaska.

The number of cruise ship passengers visiting the region, however, is a poor indicator of activity in the outfitter/guide sector. A recent survey of commercial recreation providers in Southeast Alaska, conducted by the Alaska State Division of Community and Business Development, provides a better indicator of the industry, although it is limited to a single point in time (Alaska Division of Community and Business Development 2001). The survey identified 736 commercial providers working in the region during the summer of 2000, but the actual number of firms engaged in providing commercial recreation services is probably somewhat higher, since it is not likely that the survey was able to identify all providers. Of the 736 outfitter/guides, slightly over half (58 percent) were identified as providers of saltwater fishing charters and related services. The remainder was more or less evenly divided among tour operators, hunting guides, and air and sea charters. Some 433 outfitter/guides were based in towns within the analysis area (including Juneau).

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Of the 736 surveys that were distributed, 193 were returned, a 26 percent response rate. The responses indicate growth in the industry, with 68 percent of responding firms having opened business within the past ten years; 73 percent reported increased business since 1995. With 86 percent of respondents earning gross revenues of less than \$100,000, most of the firms were relatively small, but 6 percent reported revenues above \$1 million, including one firm with revenues exceeding \$10 million. A similar distribution is noticeable in terms of clients served, with the majority of firms serving fewer than 100 clients, a smaller number of firms serving considerably larger numbers, and one firm serving clients in excess of 100,000 a year. The survey also asked questions regarding the sensitivity of businesses to competing forms of land use. High concentrations of other recreationists, particularly group sizes larger than 50, were identified by respondents as one of two factors having the largest potential negative impact on their business (the presence of jet skis was the other). The indication here is that concentrated use in large group areas may exclude other users from the immediate vicinity.

On average, each survey respondent employed 40 person-months of labor, or 3.25 full-time equivalents in the 2000 season. This number includes both full-time and part-time workers. By multiplying the total sample (736 firms) by the average employment per firm (3.25 full-time equivalents) we obtain an estimated 2,392 full-time equivalents directly attributable to the outfitter/guide industry in Southeast Alaska. The estimate for firms based within the analysis area is 1,407 (433×3.25). These estimates are based on the assumption that: (1) the survey responses are representative of the true average for firms in the region; and (2) the sample of 736 includes all firms working in the region. Both of these assumptions are questionable, the first because no non-response-bias analysis could be conducted for the survey in spite of its relatively low response rate, and the second because it is highly unlikely that all the commercial recreation providers active in the region were identified. Consequently, these employment estimates need to be viewed with caution. They nonetheless do provide some indication of the general size of the industry. The survey did not specifically identify use on the national forest.

A more direct, but less comprehensive, source of information on outfitter/guides that depend on the national forest for recreation settings and opportunities is the actual commercial use permits data reported to the Forest Service. The data indicate that on average 90 firms received permits in the analysis area in 1999 to 2001, serving about 15,500 clients each year. Of these, the 5 largest firms accounted for over half of the client base, and their activity was largely focused on providing hiking and sightseeing experiences for relatively large groups (freshwater fishing excursions with relatively small groups were important for one firm). This use was directly associated with the cruise ship industry either through linkages with cruise lines or because the firms in question ran their own tour boat services. These firms are most likely to take advantage of large group areas and other locations provided under some alternatives. Under continued growth, they are most likely to face increasing constraints under the more restrictive alternatives, or more crowding under the less restrictive alternatives, especially in the more popular areas during the summer season.

In addition to popular summer group destinations, spring hunting activity on Admiralty Island has also been identified as an area where certain planning alternatives could potentially constrain commercial activity (see the Recreation

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section, Figure 3-1). In terms of number of clients, hunting's share of total commercial activity in the analysis area (as measured by the 1999-2001 use permits) is relatively small. This may be somewhat misleading, however, since guided hunting is more involved and expensive than day-hiking or general sightseeing, and it will thus have a proportionately larger economic impact on a per-hunt basis. This is particularly so for brown bear hunting, which accounts for over three quarters of total commercial hunting activity in the spring season. (A day hike may only cost \$100 to \$150 a day per client for this activity whereas a brown bear hunt may cost as much as \$1,000 to \$2,000 per day per client to participate.)

Environmental Consequences

Use trends from 1999-2001 suggest that the overall economic effect of any alternative would be marginal, though possibly of more impact for a few individual outfitters and guides.

Overview

The potential effects of alternatives on recreation use are discussed earlier in the Recreation section of this document. In order to estimate economic effects, the recreation impacts must be translated into meaningful economic measures such as employment or income. Social impacts on communities in the region can then be at least partially inferred from the economic impacts, although important aspects of the social impacts will necessarily be overlooked.

As explained in the recreation section, the total capacity allocated to commercial use across the forest far exceeds expected overall use (See Table 3-18). However, while the total capacity exceeds total demand, commercial recreation use in specific Use Areas may be near or at capacity in some areas. Allocations in these areas may be limited in some alternatives and seasons, causing some outfitter/guides to move to other locations if they desire to maintain or increase their operations. Accurately predicting the effects of this on commercial use is difficult, mainly because we cannot predict the ability of outfitter/guides to replace one location with another. Additionally, for certain uses and certain locations it is possible that displacement or dispersal will occur well before allocated limits are reached because outfitter/guides and their clients want to avoid their perception of crowding.

The following section provides a qualitative discussion of the possible effects of each alternative.

Socioeconomic Effects on Non-commercial Users (Issue 1)

As indicated in the description of the current socioeconomic environment, the natural amenities and recreation opportunities in Southeast Alaska are an important factor in attracting residents and keeping them in the region, and this is an important source of economic activity. To actually quantify these relationships and the expected impact of the proposed alternatives on them is not currently possible.

It is reasonable to assume that the more commercial use authorized, the more there is a potential to affect the experience for local residents. At the same time, non-commercial use can also lead to crowding and to noise and site degradation. Therefore, restricting commercial use only is no guarantee that the quality and quantity of recreation opportunities for non-commercial users will be maintained. However, when examining the number of persons who may be authorized by each alternative, Alternative 4 is like to least affect local users followed by Alternatives 2, 5, 1, and 3. While Alternative 1 has a potential to accommodate as many users as Alternative 3, the individual analysis required to accommodate this use would slow the process for issuing permits.

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Socioeconomic effects on the Recreation Industry (Issue 2)

If past trends continue, commercial recreation use in the analysis area will continue to grow, although perhaps not at the same pace as seen throughout much of the 1990s. If this is the case, the impacts of the alternatives and the differences among them will be more important. As noted in discussion of the Recreation resource, there are some locations that, depending on the alternative, may pose some restrictions or limitations for future use as the managed capacity may have already been reached (See Tables 3-19, 3-20, and 3-21). All alternatives have the potential to accommodate additional commercial recreation use. The least restrictive Alternative is Alternative 3, followed by Alternative 5, 2, 4 and 1. While it appears alternative 2 and 5 may have more locations approaching the overall allocation by season, these alternatives accommodate more than twice the use as proposed by Alternative 4 so the potential for more overall use is much higher with these alternatives. Alternative 1 has the potential to accommodate more use than Alternatives 2, 4 and 5 but as expansion is predicated on additional site-specific analysis, (or on a case by case basis when requested by a commercial recreation operator), the potential rate for expansion may be somewhat diminished.

The outcome of expansion could have a variety of effects depending on the businesses. In some places, the faster growing alternatives (Alternatives 4, 5, 2 and, potentially, 1) might cause some displacement of existing outfitter/guides who advertise a more primitive setting near communities or in Use Areas that previously have little use. All alternatives would accommodate growth consistent with current Forest Plan land use designations according to the Forest Plan standards and guidelines. How quickly use grows may be more of a function of the infrastructure that provides access to the communities through the State Marine Highway, improvements to State highways, or via airports.

Cumulative Effects

As described earlier, tourism is a major factor enabling many communities in the analysis area to adapt to recent sharp declines in the wood products and seafood processing industries. Since tourism has become a major element in the regional economy, any effects, positive or negative, become increasingly important.

Alternatives 2, 4, and 5 would result in a few minor local limits on current commercial recreation use levels, but these are likely not large enough to have a significant effect on the regional economy. No limits would occur under Alternative 3. All the action alternatives allow for growth in commercial use across the analysis area as a whole. Alternative 1 would not provide any amount of certainty regarding the allowed level of future commercial use as the individual NEPA decisions needed to consider each proposed use or smaller geographic area would slow the authorization process considerably. The outfitter/guide component of the overall tourism sector is relatively minor for the larger towns and the region as a whole, although in some of the smaller communities this is likely to become more important. Cumulative effects of the action alternatives in terms of increased employment and revenue on the regional economy would likely be positive. The higher the alternative allocation to commercial, the more potential each alternative would have for cumulative growth in this sector.

Another less tangible but no less important factor is the amenity values and recreation opportunities provided by the national forest. These values and

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opportunities are a major ingredient in the quality of life enjoyed by the residents of Southeast Alaska. This analysis centers around how commercially guided recreation fits within the context of non-commercial recreation and the region's natural character, which is highly valued by residents and non-residents alike. Growth in regional population and increases in independent travelers who do not use outfitting and guiding services will continue to reduce the opportunities for experiencing solitude in certain areas. Opportunities for solitude would still exist in the analysis area but at reduced levels from those currently available.

Wilderness

Introduction

The National Wilderness Preservation Act of 1964 mandates that designated wilderness areas:

“...shall be administered for the use and enjoyment of the American people in such a manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness.”

Congress designated wilderness in the analysis area in two pieces of legislation. The Alaska National Interest Lands Conservation Act (ANILCA) of 1980 established four wilderness areas within the analysis area totaling 2,174,634 acres. One area within this project area, Admiralty Island, was also designated as National Monument. Prior to ANILCA there were no designated wilderness areas in the analysis area. In 1990, the Tongass Timber Reform Act (TTRA) amended ANILCA, and designated two new wilderness areas and one wilderness addition within the analysis area totaling 115,856 acres. This brings the total to 2,290,490 acres in six wilderness areas within the analysis area (see Table 3-22).

Table 3-22. Wilderness Areas Within the Analysis Area

Name	National Forest Acres	National Forest Acres Within Shoreline Zone
Wilderness Areas Established by ANILCA		
Kootznoowoo*	937,396	157,104
South Baranof	319,568	88,566
Tracy Arm – Fords Terror	653,179	47,091
West Chichagof – Yakobi	264,491	78,224
Wilderness Areas Established by TTRA		
Young Lake Addition to Kootznoowoo	18,462	*
Chuck River	74,298	9,754
Pleasant-Lemesurier-Inian Islands	23,096	13,489
<hr/>		
Total Acreage	2,290,490	394,228

* Kootznoowoo Wilderness includes the Young Lake Addition acres in analysis area.

Source: Total acreages are as reported to Congress with official boundary maps. These wildernesses include only the public lands above mean high tide.

Affected Environment

In ANILCA, Congress reaffirmed and expanded upon the purpose of wilderness as described in the 1964 Wilderness Act, specifically for wilderness established in Alaska. In recognition of unique situations and established uses in Alaska, ANILCA also provided a number of specific exceptions to prohibitions of the Wilderness Act.

More recently, a March 2001 U.S. District Court Order required the completion of a Supplemental Environmental Impact Statement to the Forest Plan to evaluate roadless areas for recommendations as potential wilderness. The Regional Forester selected the no-action alternative on February 24, 2003, which did not recommend additional areas for a wilderness designation. The analysis in the Final Shoreline EIS regarding the effects of outfitter/guide use on wilderness areas is based on that decision.

The Forest Plan manages wilderness through specific wilderness LUDs and standards and guidelines.

Overview

Many of the wildland ecosystems of Southeast Alaska are represented within wilderness included in the analysis area. These ecosystems include glaciers, offshore islands, and seacoasts facing the open Pacific Ocean and inland passages, major river systems, and old-growth temperate rain forests. One of the largest areas, Kootznoowoo (Admiralty Island) Wilderness, contains vast, virtually intact ecosystems. Wilderness areas are mostly in a pristine condition with the imprint of humans generally not noticeable. They offer outstanding opportunities for solitude and primitive recreation away from the shoreline.

Management intensity varies among wilderness areas. Areas with the highest use tend to have the most need for management, which is geared toward helping resolve user conflicts and preserving the wilderness resource. Some areas, such as Kootznoowoo (Admiralty Island) and Tracy Arm–Fords Terror Wilderness Areas,

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have more intensive management programs such as campsite monitoring, use of permit systems (Pack Creek), wilderness ranger patrols, visitor contacts, and visitor education programs. West Chichagof and South Baranof Wilderness Areas undergo campsite monitoring and inventory. Other wilderness areas are managed less intensively.

On average, 15,500 recreationists were guided in the analysis area from 1999 to 2001. Of these, some 3,500 visitors were commercially guided to wilderness areas within the analysis area. These visitors recreated in an average 891 groups annually during that time period. Commercial recreation activities occurring in the wilderness areas are similar to other areas in the analysis area. Nature walks, fishing, hunting, camping, and sightseeing activities predominate. Approximately 21 percent of these visitors and 15 percent of the groups camped in the wilderness. Camping activities generally create the most impact of all recreation activities because of the actual time on the ground, the potential impacts of tent use, and the creation of social trails. Lengthier stay increases potential for negative social and wildlife effects. Wildlife may be affected by longer presence of people, particularly during early morning and evening hours when animals are most active.

While average current commercial use levels are relatively light in comparison to calculated recreation carrying capacity, use is not evenly distributed and tends to concentrate in a few areas: Rakovoi Bay, Red Bluff Bay, Whale Bay, Pleasant Island, Fords Terror, Pybus Bay, and Brothers Islands.

Wilderness Areas Within the Analysis Area

The following section presents wilderness area descriptions, including information on: access, facilities, use, and recreation. Note that the shoreline zone is only a small part of each wilderness area.

Kootznoowoo Wilderness (Admiralty Island)

The 955,858 acre Kootznoowoo Wilderness within Admiralty Island National Monument (including the Young Lake addition) is a largely intact coastal island ecosystem. The area was originally designated a national monument in 1978 by presidential proclamation, which recognized the island for its superlative combination of scientific and historical objects. There are 157,104 acres within the shoreline section of the wilderness (16 percent of the total acreage). The island is internationally known for its population of brown bears and bald eagles, and renowned for its old-growth spruce and hemlock forest. The area has also been designated a *Man in the Biosphere Reserve*, which entails fostering relationships between people and the biosphere by integrating social, physical, and biological sciences to address issues. Monitoring, research, and education are also important components of these reserves. Protection and study of Tlingit cultural resources, other historical resources, ecology, geology, brown bears, and bald eagle populations are specifically directed in the Forest. The Forest Plan goal for the island is to preserve the ecosystem for research opportunities. Management objectives focus on inventory, research, protection, and interpretation of resources, and making that information available to the public and other agencies.

Recreation facilities include 14 recreation cabins, 9 shelters, and 27 miles of trail. (There are three cabins and two shelters within the Shoreline analysis area on Admiralty Island.) The Cross Admiralty Canoe Route and Pack Creek Bear Viewing

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Area are prime recreation attractions that receive concentrated visitor use. Except for Pack Creek and the Mitchell Bay area, visitors experience a moderately low frequency of encounters. A great deal of use takes place on the shoreline and in adjacent saltwater where fishing, sightseeing, wildlife viewing and photography occur. Despite the presence of boats and airplanes, Kootznoowoo remains a high quality wilderness experience. Opportunities for risk, challenge, remoteness, and solitude are generally good. Access is more readily available than some more remote wilderness areas. The northeastern portion is easily accessible from Juneau by small boat or floatplane and affords consistently good opportunities for fall hunting. The southern portion is also accessible from Kake, Kupreanof, and Petersburg by small boat or floatplane and also affords consistently good opportunities for fall hunting. Alaska Marine Highway provides transportation to Angoon on the west side of Admiralty Island, which serves as a portal for points south and east. Many of the interior lakes are accessible by floatplane. There is one lodge on private land on the south end of Admiralty Island in Pybus Bay. A lodge within the interior of the island, while not normally allowed within a wilderness, permitted by the Forest Service on Thayer Lake as it is specifically authorized by ANILCA.

South Baranof Wilderness

The 319,568 acre South Baranof Wilderness occupies the south end of Baranof Island. There are 88,566 acres within the shoreline section of the wilderness (28 percent of the total acreage). South Baranof Wilderness is composed of high mountains rising from sea level to approximately 4,000 feet elevation within two or three miles of the beach. Much of the higher elevation is covered with permanent snowfields, cirques, and lakes, with waterfalls near the coast.

Generally, this wilderness offers visitors outstanding opportunities for risk, challenge, remoteness, and solitude due to its inaccessibility and wild character, particularly on the Gulf of Alaska side. Visitors may have more frequent encounters with the sights and sounds of human activities adjacent to the shorelines of this wilderness because commercial fishermen often seek refuge from storms in the many sheltered bays. There are three public recreation cabins and two trails totaling one and a half miles. The public recreation cabins are not in the Shoreline analysis area. Much of the recreation use is associated with these developed facilities, but the bulk of the wilderness offers a high degree of remoteness and solitude. Common recreation activities include freshwater lake fishing, big game hunting, camping, hiking and boating. South Baranof Wilderness receives moderate deer and goat hunting from Sitka, Kake, and Angoon residents. Beach combing, photography and fishing are also popular activities.

Tracy Arm–Fords Terror Wilderness

The 653,179 acre Tracy Arm–Fords Terror Wilderness is about 50 miles southeast of Juneau. The only water access to the majority of this wilderness is through Holkham Bay, adjacent to Stephens Passage. There are 47,091 acres within the shoreline section of the wilderness (seven percent of the total acreage). Tracy Arm–Fords Terror Wilderness lies adjacent to Chuck River Wilderness on the west. Long, narrow fiords that reach from salt water to 5,000-7,000 foot glacier-covered peaks characterize this wilderness. Dramatic water features in the area include cascades, waterfalls and icebergs floating in salt water.

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There are no public trails or facilities in this wilderness. The majority of recreation use occurs in Tracy and Endicott Arms by large cruise ships, smaller tour boats and permitted outfitter/guides, mainly from Juneau. The area also receives kayak use by the general public. The highest use is attributed to cruise ships in Tracy Arm, often resulting in interruption of solitude and remoteness. Endicott Arm receives less use by tour boats and opportunities for solitude and remoteness increase as one approaches Dawes Glacier. Tracy Arm–Fords Terror Wilderness is very large and the majority of this wilderness offers outstanding opportunities for risk, challenge, remoteness and solitude away from the shoreline.

West Chichagof–Yakobi Wilderness

This 264,491 acre wilderness encompasses the western side of Chichagof and Yakobi Islands from Kakul Narrows to Soapstone Point. There are 78,224 acres within the shoreline section of the wilderness (30 percent of the total acreage). The distance of this wilderness from population centers and its relative inaccessibility have allowed most of the area to retain its primitive wilderness character. Visitors can expect an experience of isolation from the sights and sounds of humans, closeness to nature, tranquility and self-reliance in an environment that offers a high degree of challenge and risk.

Facilities include four recreation cabins and five hiking trails totaling 6.8 miles. Two of the four public use cabins are within the Shoreline analysis area. The opportunity for solitude is reduced around these facilities. Use is especially concentrated around the public recreation cabin at White Sulphur Hot Springs, a favorite stop of boaters, commercial fishers, kayakers, guided groups, and others. Some areas along the shoreline have a long history of human habitation, especially related to mining. Visitation has been steadily increasing. Recreational fishing, sightseeing, camping, picnicking, hiking, hunting and gathering forest products have increased in popularity during recent years. Kayaking, in particular, has become a major recreational pursuit and mode of transportation for visitors. Long-term increase in recreation will probably focus on the outer coast of Chichagof and Yakobi islands.

Chuck River

This 74,298 acre wilderness area stretches from the Chuck River drainage and upper Windham Bay north to Point Astley on Holkham Bay (also known as Sumdum Bay) with use of private lands common within the Chuck River area. Subsistence use is moderate and includes a portion of the south side of Endicott Arm. There are 9,754 acres within the shoreline section of this wilderness (13 percent of the total acreage). The area is about 10 miles northeast of Hobart Bay and about 70 miles south of Juneau. It is adjacent to the Tracy Arm–Fords Terror Wilderness and abuts areas of current and planned logging activity. There are known mineral deposits, including old mines and numerous un-patented mining claims within the wilderness. Recreation use has increased slightly and may increase if further development at Hobart Bay occurs. Fish habitat values are high and the area is a large producer of pink, chum and coho salmon.

This wilderness may offer a sense of solitude and remoteness away from the shorelines of Windham Bay. The bay receives moderate traffic from pleasure vessels, small tour boats, commercial fishing vessels and local cabin owners with

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inholdings. The Narrows and water depth at the head of the bay limit large boat access. A small, rustic lodge is present near the head of the bay. Recreation opportunities are primitive and there are no Forest Service public recreation facilities except for 0.8 miles of primitive trail. This area has a rich cultural history related to mining, fox farms, and homesteading.

Fishing and bear hunting are major recreation activities. The fiords and tidewater glaciers that draw cruise ships to neighboring Tracy Arm–Fords Terror are not present in this wilderness. Because of this, the area still offers an outstanding opportunity for risk, challenge, remoteness and solitude.

Pleasant–Lemesurier–Inian Islands

This 23,151 acre wilderness consists of Pleasant Island, Lemesurier Island, and Inian Islands in Icy Strait between Chichagof Island and Glacier Bay National Park. There are 13,489 acres within the shoreline zone of the wilderness (58 percent of the total acreage).

Although no major fish streams are located on the islands, there is some habitat for deer and grouse and subsistence use does occur. The nearest communities are Gustavus, Elfin Cove and Hoonah. Uses in and around this wilderness include heavy cruise ship traffic accessing Glacier Bay, subsistence deer hunting on the islands, and subsistence fishing and extensive boat traffic in surrounding waters from local residents. Most of the use affecting this wilderness occurs in surrounding waters. Because of heavy use surrounding the islands, opportunities for risk, challenge, remoteness, and solitude are limited.

Environmental Consequences

Direct Effects on Recreation Users and the Recreation Industry (Issues 1 and 2)

Commercial recreation use in wilderness could affect values such as solitude, sense of isolation, sense of remoteness, self-reliance, challenge, risk and untrammelled natural character. People are also concerned about possible cumulative impacts to these wilderness values.

Wilderness resources and values are difficult to describe and quantify because of the complexity of the resource and range and variety of personal feelings about wilderness. This analysis uses the Wilderness Act of 1964, ANILCA (1980), and the Tongass Timber Reform Act (1990) to identify the primary values inherent in wilderness.

Each alternative has been analyzed with regard to effects on the following values:

- Opportunity for solitude, sense of isolation
- Sense of remoteness – that is, remoteness from the sights and sounds of human activities
- Opportunity and setting for primitive recreation, including elements of challenge and risk
- Protection of the natural state of wilderness – undeveloped, untrammelled, unaltered, undisturbed ecosystems

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Effects on ecosystems such as soils, vegetation, fish and wildlife are covered in other sections of this chapter. Generally, factors associated with use are:

- number of encounters,
- impact on solitude,
- dispersal of visitors,
- displacement of visitors, and
- resource degradation.

Not all of the factors listed above are independent of one other. For example, increased encounters could negatively affect visitors' sense of solitude or cause displacement of visitors.

The actual effects of guided use for most factors are primarily proportional to overall use in the alternative allocations. Higher allocations could result in higher levels of use. The likely association is diminished sense of solitude, isolation and remoteness. Some people may experience a decreased feeling of risk and challenge, knowing that other parties are in the area that could provide assistance in the event of emergency. High use levels could affect the physical characteristics of campsites and trails (bare soil and roots, soil compaction, vegetation loss, lack of firewood) as well as the addition of other characteristics (fire rings, litter, human waste). These characteristics are often measured through a process known as the Limits of Acceptable Change (LAC).

To provide a comparative basis for describing the various alternatives' commercial allocation effects on wilderness, an estimated level of potential use was developed based on 1999-2001 average use levels. This use was split into two categories: day and overnight use. Day use is typically boat-based and duration is usually no more than several hours. Most participants are hiking, brown bear hunting, wildlife viewing or generally sightseeing. Overnight use is considered to last at least 14 hours in one location. Camping generally creates the most impact of all the factored activities. This is because of length of stay and establishment of tent sites, social trails and fire rings. In addition, litter and human waste tend to be of greater concern.

Table 3-23 compares estimated potential commercial use in wilderness under different alternatives. These estimates assume that wilderness use and camping levels will continue at the same proportions to the total allocation as they did in 1999 to 2001. Thirty-six percent of the total commercial use in 1999-2001 in the analysis area occurred in wilderness. Sixteen percent of that wilderness use involved camping. These percentages from the 1999-2001 actual use data were extrapolated against the total allocation under each alternative to provide an estimate of potential wilderness use in the future.

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Table 3-23. Estimated Potential Commercial Use in Wilderness, by Alternative, Based on 1999 to 2001 Use Levels

Commercial Use	1999-2001 Actual Use	Alternative*			
		2	3	4	5
Day Use	751	5,257	12,767	1,953	6,008
Overnight Use	140	980	2,380	364	1,120
Total Groups	891	6,237	15,147	2,317	7,128

*Alternative 1 is not shown because the no-action alternative makes no specific allocation. Commercial use is allowed on a case-by-case basis from current levels up to 50 percent of the recreation carrying capacity.

Dispersal—when

people spread out and travel farther to find desirable and available campsites or places.

Displacement—when

people avoid an area on a long-term basis because of regulation or crowding.

Impacts from increased use would likely be most acute at areas with natural attractions or sites with physical characteristics that concentrate use such as Fords Terror and Tracy Arm. Protected anchorages and areas allowing easy boat access may also focus use on adjacent sites such as the Brothers Islands. Impacts may also occur at specific locations where groups are dropped off or picked up (Harbor Island, Oliver Inlet). Most of these locations are along the shoreline where visibility and noise carry further than they would within a forested area.

Increasing levels of use may have other effects on wilderness such as dispersal and displacement. These effects can be difficult to measure but are often due to the type and amount of use within a wilderness. *Dispersal* is when recreationists spread out and travel farther to find desirable and available campsites or places to go ashore. In this analysis, dispersal is viewed as a short-term effect. For example, a visitor may move farther down the shoreline because another group is using the preferred area. *Displacement* is more of a long-term effect. This is the result of visitors avoiding an area within a wilderness based on previous experience such as regulation or crowding. Displacement can mean relocation to a different wilderness or Land Use Designation (LUD) that is capable of providing the desired recreation experience.

Dispersal within these Alaska wilderness areas may not occur as easily as in other wilderness areas. Lack of trails, very steep terrain and thick vegetation in many locations make local dispersal physically more difficult. The unique nature of coastal wilderness ties use of the land to the travel routes and attractiveness of marine waters. On the other hand, dispersal may occur more easily because access is readily available along marine waters. Displacement more often occurs with local visitors who have greater ability to make repeat visits to an area and can more easily sense degree of change. This type of displacement has been evident at Pack Creek. The proportion of residents visiting the site has declined from 50 percent to about 20 percent of total use.

As use increases, it is difficult to accurately predict where increased use will occur or how much impact will take place. In this analysis, it is assumed that use levels will continue to increase in areas currently receiving high levels of use up to the point where site-specific capacities are required. Areas that are currently only slightly used will see an increase in use levels. It is also probable that similar areas nearby to these popular sites will become substitutes and grow in popularity. For example, if one bay or an arm of a bay reaches capacity, it is likely that the nearest bay offering similar attributes (protected anchorage, trail, open timber for hiking, good beaches)

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will experience increased use. Areas currently receiving very low or no use will likely see increased growth depending on the commercial allocation as more popular areas reach capacity.

Potential direct effects of each alternative are discussed below:

Among the action alternatives, **Alternative 3** would allow for the highest amount of commercial use and highest amount of use in wilderness. Estimated day use could increase from 751 groups to 12,767 groups, and overnight use from 140 groups to 2,380 groups. However, this level of use would not likely occur in the near future based on current growth rates. This use level is consistent with the Forest Plan standards and guidelines for wilderness.

Alternative 3 would have the greatest potential to disperse and displace both guided and non-guided visitors compared to the other alternatives. There is greater potential for some outfitter/guides to be displaced because restrictions may make it difficult to conduct business or client satisfaction may be decreased.

At this level of use, impacts on some heavily used campsites could exceed the limits of acceptable change (LAC), triggering management actions. The most fragile and/or popular sites would be most susceptible, depending on individual site conditions. More campsites would likely be affected under Alternative 3 than under the other alternatives. Site-specific monitoring would identify sites exceeding LAC. Rest/rotation of campsites could be difficult because of higher demand for sites. Specific sites could be hardened, but this is generally not encouraged within wilderness.

Alternative 3 would have the highest potential for regulation and strategies to limit use such as use permits, use limits, zoning use by time and space and limitations on camping. These strategies would need to be implemented broadly rather than limited to areas of concentrated use. Sense of solitude and remoteness could decrease for all visitors. Non-commercial and guided groups could both experience considerable loss of the sense of challenge and risk because of likely increase in number of encounters. If wilderness permits were to become necessary, some visitors to more crowded areas could have a reduced quality of experience. This would be the likely result of regulatory restraints placed upon visitors such as campsite selection, visitor numbers, or date availability.

Alternative 5 would allow for the second highest amount of total commercial use and use in wilderness. Compared to 1999-2001 commercial use levels, day use could increase from 751 groups to 6,008 groups and overnight use from 140 groups to 1,120 groups. However, this level of use is not likely to occur in the near future based on current growth rates. This use level is consistent with the Forest Plan standards and guidelines for wilderness.

Alternative 5 has the second highest potential for crowding or other impacts.

This alternative provides the second highest potential to cause dispersal or displacement of wilderness users from concentrated areas of use. Displaced users may elect to visit a less crowded wilderness or to a non-wilderness LUD that provides the recreation experiences they are seeking.

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Impacts on campsites at specific locations could exceed the limits of acceptable change (LAC) with this level of use, which could trigger management actions such as campsite hardening or rest/rotation. The most fragile and/or popular sites would be most susceptible, depending on individual site conditions. Site-specific monitoring would identify sites exceeding LAC.

Alternative 5 would have the second highest potential for regulation and strategies to limit use at specific locations. Strategies could include wilderness use permits, use limits, zoning use by time and space, and limitations on camping. These strategies may be applied to prevent overcrowding at locations that have historically had the most use (best campsites, protection from the weather, natural attractions). Because of higher use, sense of solitude and remoteness could decrease for some guided and unguided visitors. Unguided users would most likely experience a greater loss of sense of challenge and risk at these locations. This may also occur if visitors were required to register for use of certain locations when they obtain a permit. Guided visitors would probably not be as adversely affected since their activities are already regulated through Special Use Permits. Overall, the use of these management strategies would be limited to concentrated areas of use and not necessary for large portions of wilderness areas.

Alternative 2 has the third highest commercial use allocation and would allow for the third most potential for use in wilderness areas. This alternative would allow for an increase in wilderness use over the 1999-2001 average. Estimated day use could increase from 751 groups to 5,257 groups, and overnight use from 140 groups to 891 groups. However, this level of use would not likely occur in the near future based on current growth rates. This use level is consistent with the Forest Plan Standards and Guidelines for wilderness.

Alternative 2 could result in dispersal and displacement of some users. This may occur if visitors wish to avoid other users or as a result of requirements of a wilderness permit system (if established). Displaced users may elect visit less crowded wilderness areas or to non-wilderness LUDs that provide similar experiences.

Impacts to campsites at specific locations could exceed the limits of acceptable change (LAC) with this level of use. This would trigger actions such as campsite hardening or rest/rotation. The most fragile and/or popular sites would be most susceptible, depending on individual site conditions. Sites in Tracy Arm, Endicott Arm, Fords Terror, northern Seymour Canal, Brothers Islands, and Pleasant Island are areas that could be unacceptably affected. Site-specific monitoring would identify sites exceeding LAC.

Alternative 2 has more potential for regulation than Alternatives 1 and 4 but less than Alternatives 3 and 5. At specific locations where concentrated use may cause effects beyond LAC, management strategies to restrict use (wilderness use permits, use limits, zoning use by time and space, and limiting camping, for example) would likely be implemented. This would be done to prevent overcrowding at specific locations that have historically had the most use (best campsites, protection from the weather, natural attractions). Because of higher use levels, sense of solitude and remoteness could decrease for some guided and unguided visitors. Unguided users would likely experience a greater loss of the sense of challenge and risk. This may occur if visitors were required to register for use of certain locations. Guided visitors

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would probably not be adversely affected by the permitting process since their activities are already regulated through Special Use Permits.

Alternative 4 has the lowest commercial use allocation and allows for the least use in wilderness. Estimated day use would increase from 751 groups to 1,953 groups and overnight use from 140 groups to 364 groups. This level of use is consistent with the Forest Plan standards and guidelines for wilderness.

At specific locations where concentrated use may cause impacts that exceed limits of acceptable change (LAC), management strategies to restrict use (wilderness use permits, use limits, zoning use by time and space, and limitations on camping for example) may need to be implemented. This would be done to prevent overcrowding at locations that have historically had the most use (best campsites, protection from the weather, natural attractions).

At these potential use levels, sense of solitude and remoteness could decrease for some guided and unguided visitors. Unguided users would likely experience a greater loss of the sense of challenge and risk. This might occur if visitors were required to register for use of certain locations. Guided visitors would probably not be adversely affected by the permitting process since their activities are already regulated through Special Use Permits.

Alternative 4 would have the least effect on dispersal and displacement of visitors, who could more easily avoid other users or requirements of a permit system at a specific site. Some displaced users could elect to visit a less crowded wilderness or an LUD providing similar experiences.

Impacts on campsites and other areas used would be low in Alternative 4, but could exceed the LAC on a site-by-site basis. Management strategies such as campsite hardening or rest/ rotation that would reduce or minimize impacts could be implemented. The most fragile and/or popular sites would be most susceptible, depending on the individual site conditions. Site specific monitoring would identify sites exceeding LAC.

Even at this relatively low level of use, there is potential for crowding or other impacts where there are specific attractions. But overall it is not likely that strategies to manage use along large shoreline portions of wildernesses would be necessary. The opportunity for a remote experience with isolation and a sense of privacy while on National Forest System lands would be greatest under this alternative.

The following places may become more popular as substitute sites for currently popular areas under **Alternatives 2 and 5**:

Eliza Harbor	Gambier Bay	Hood Bay
Chaik Bay	Patterson Bay	Gut Bay
Red Bluff Bay	Whale Bay	Kritoi Basin
Still Harbor	Port Banks	Cedar Pass
Crawfish Inlets	Leo's Anchorage	Cobol
Ford Arm	Klag Bay	Lake Anna
Black Bay	Goulding Harbor	

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The northeastern portion of Admiralty Island, and the White Sulphur Springs Area, including Sea Level Slough, Mirror Harbor, Inian Island and Hoktaheen River are other possible sites.

Alternative 1 does not establish a specific allocation of commercial use. It provides a commercial allocation equal to actual use authorized on a case-by-case basis. This could be up to 50 percent of the carrying capacity. The existing moratorium on brown bear guiding and site-specific limits on commercial use in areas such as Fords Terror would continue. In addition, the existing commercial use stipulations at other wilderness locations, such as prohibitions on outfitter/guide use above the grass flats at King Salmon River and Wheeler Creek, would remain in effect. Allocations would not be set for commercial use, so use levels and their effects are difficult to predict. The current level of use by unguided recreationists could continue or increase. Wilderness experience with remoteness from sights and sounds of human activity, isolation, and sense of privacy would likely be maintained.

Indirect Effects on Recreation Users and the Recreation Industry (Issues 1 and 2)

Indirect effects of these alternatives, such as spiritual and intrinsic values of wilderness, are difficult to measure. People who may not visit a wilderness area may still appreciate wilderness vicariously and support its concept and existence. Knowing there are still wild places on earth with spiritually sustaining and cleansing qualities is important to many people, many of whom never visit wilderness. As visitor numbers increase, concern regarding preservation of the wilderness resource may increase.

Potential indirect effects of each alternative are as follows:

Alternative 3 has the greatest potential for indirect effects due to increased use. People who benefit spiritually or vicariously from wilderness may feel that some key characteristics inherent in wilderness have been eroded.

Alternative 5 has the second highest potential to affect users who benefit spiritually or vicariously from wilderness. However, it is not likely this user segment would be able to detect changes to key wilderness characteristics.

Alternative 2 would probably not affect users who benefit spiritually or vicariously from wilderness. They would not likely be able to detect the changes anticipated at this proposed level of use.

Alternative 4 has the least potential to affect users who benefit indirectly from Wilderness. It is not likely that such users would be able to detect the kinds of changes anticipated at this proposed level of use.

Alternative 1, with current low use level and minimal impacts at most locations, would not likely affect people who derive spiritual or vicarious benefit from Wilderness.

Cumulative Effects on Recreation Users and the Recreation Industry (Issues 1 and 2)

Activity adjacent to wilderness areas may add to the cumulative effects of this project. Increased boat traffic on marine waters could have an effect on adjacent wilderness. The type of boats passing could affect wilderness users. Larger boats

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may have an effect because of their larger scale; smaller boats may have an effect because they can operate closer to shore. Near-shore commercial fisheries may also contribute to the cumulative effect. Over-flights by aircraft for scenic tours and commercial purposes could create similar effect. All of these activities could contribute to noise, visual impacts and a diminished feeling of solitude.

Another potential cumulative effect is development on private property adjacent to or on in-holdings within wilderness, primarily in the form of lodges. These lodges would likely create increased activity in adjacent wilderness and waters, affecting other wilderness visitors. It is difficult to accurately predict future development on private lands but for the purpose of this analysis, existing and currently proposed lodges are considered. It is assumed that they could have an effect, based primarily on their proximity to the wilderness.

Specific potential cumulative effects under each alternative could include the following:

Alternative 3 has the most potential for increased use in the form of additional plane and boat traffic accessing wilderness or areas adjacent. The commercial allocation under this alternative could result in development of more lodges and tourism-related businesses. Small communities adjacent to wilderness such as Gustavus, Elfin Cove, Excursion Inlet, Hoonah, Tenakee, Pelican, and Angoon may be proportionately affected. Because of the level of increased use, larger communities such as Juneau and Sitka could also be affected.

Alternative 5 would likely increase potential for use in the form of added plane and boat traffic accessing the wilderness or areas adjacent. However, it would be less than under Alternatives 3. Commercial allocation under this alternative could result in development of more lodges and tourism-related businesses. Small communities adjacent to wilderness such as Gustavus, Elfin Cove, Excursion Inlet, Pelican, Hoonah, and Angoon would likely be affected more than larger communities.

Alternative 4 would likely increase potential for use in the form of added plane and boat traffic accessing the wilderness or areas adjacent. However, it would be less than that anticipated under Alternatives 3 and 5. Commercial allocation under this alternative could result in development of more lodges and tourism-related businesses. Small communities adjacent to wilderness such as Gustavus, Elfin Cove, Excursion Inlet, Hoonah, Tenakee, and Angoon would likely be affected more than larger communities.

Alternative 2 would likely increase potential for wilderness use in the form of added plane and boat traffic accessing the wilderness or areas adjacent. Commercial allocation under this alternative could result in development of more lodges and tourism-related businesses. Small communities adjacent to wilderness such as Gustavus, Elfin Cove, Excursion Inlet, and Angoon would likely be affected more than larger communities.

Alternative 1 cumulative effect would be similar to those under the action alternatives. Currently, four lodges on or adjacent to Admiralty Island are within the analysis area. A fifth is under construction. A lodge exists on private land adjacent to the Chuck River Wilderness. In addition, management activities by other agencies may contribute to use in or adjacent to wilderness. For example, Glacier Bay

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National Park's 2001 vessel restriction displaced boats that normally visited the park. This resulted in increased boat traffic in Tracy Arm.

Summary of Wilderness Effects

In summary, all of the alternatives provide commercial use levels consistent with Forest Plan wilderness goals, objectives, standards, and guidelines. As allocations increase, there is increased potential for higher levels of use in wilderness. Higher allocations would allow more people to visit the wilderness, where they might not otherwise go without the services of an outfitter/guide. These increased use levels could result in more effects to wilderness values in specific locations. The effects could be mitigated by increased regulation where necessary. However, increased regulation could affect the untrammelled or unhindered element of the wilderness experience.

Roadless Area Evaluations for Wilderness Recommendations

The Tongass National Forest is more than 90 percent roadless, including wilderness. Only small areas where communities are developing or where road construction and timber harvest have occurred are developed to any noticeable degree. At various times in the past, "boom and bust" development resulted in temporary development and occupation of small areas that have since been largely reclaimed by nature. Developed areas total 1.3 million acres or about 8 percent of the Tongass. Southeast Alaska residents, who number approximately 73,000, are virtually surrounded by land many consider wilderness. Routine travel and ordinary outdoor recreation activities may require a higher degree of skill, risk-taking and self-reliance than are typically required of adventurous backcountry visitors on other National Forests. This wilderness and lifestyles associated with it are highly prized by residents and visitors alike.

A total of 110 inventoried roadless areas were identified and examined for potential wilderness recommendations in the 1997 Tongass Forest Plan Revision Final EIS that resulted in the 1997 Tongass National Forest Land and Resource Management Plan (Forest Plan). The 110 roadless areas identified covered approximately 9.4 million acres of National Forest System land. An update of this inventory appears in the Final Supplement to the 1997 Tongass Land and Resource Management Plan-Roadless Area Evaluation for Wilderness Recommendations, which addresses 115 roadless areas totaling approximately 9.7 million acres. Thirty of these roadless areas fall within the Shoreline Outfitter/Guide analysis area. These are shown in Table 3-24.

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Table 3-24. Roadless Areas within the Shoreline Analysis Area

Roadless Area Number	Roadless Area Name	Roadless Area Number	Roadless Area Name
201	Fanshaw	317	Point Augusta
301	Juneau-Skagway Icefield	318	Whitestone
302	Taku-Snettisham	319	Pavlof-East Point
303	Sullivan	321	Tenakee Ridge
304	Chilkat-West Lynn Canal	323	Game Creek
305	Juneau Urban	325	Freshwater Bay
306	Mansfield Peninsula	326	North Kruzof
307	Greens Creek	327	Middle Kruzof
308	Windham-Port Houghton	328	Hoonah Sound
309	Juneau Islands	329	South Kruzof
310	Douglas Island	330	North Baranof
311	Chichagof	331	Sitka Urban
312	Trap Bay	332	Sitka Sound
313	Rhine	333	Redoubt
314	Point Craven	334	Port Alexander

See Table 3.3-45 of the DEIS Roadless Area Evaluation for Wilderness Recommendations, pp. 3-152-53.

The FEIS Roadless Area Evaluation for Wilderness Recommendations provides a description of these roadless areas, an evaluation of their wilderness characteristics, as well as effects of the alternatives from that analysis of wilderness values, recreation, tourism, outfitter/guides, and other forest resources. That analysis is incorporated here by reference.

The preferred alternative identified in the Record of Decision for the Final Supplement did not recommend any additional wilderness areas and the analysis in this Final Shoreline EIS regarding the effects of outfitter/guide use on wilderness areas is based on that decision.

Recreation activities proposed in the Shoreline Outfitter/Guide EIS involve temporary short-term use and will not affect potential wilderness or roadless characteristics.

Wild, Scenic, and Recreation Rivers

Introduction

The Wild and Scenic Rivers Act of 1968, as amended, provides a means for recognizing and protecting the outstandingly remarkable values specific to suitable rivers. Values may include scenic, recreation, geologic, fish and wildlife, historical, cultural, ecological, or others for suitable rivers. The intent of including a river in the National Wild and Scenic Rivers System is to preserve the free-flowing condition of the river itself, as well as characteristics of the river's immediate environment, for enjoyment and benefit of present and future generations.

If a river is considered eligible and suitable, it is recommended by the land management agency for designation as a 'wild', 'scenic', or 'recreation' river. This is a preliminary administrative recommendation developed as part of the Forest Plan. Only Congress has the authority to act on recommendations for a final wild, scenic, or recreation river designation.

Affected Environment

The Forest Plan recommended six rivers (five wild rivers and one scenic river) within the analysis area shoreline zone to be considered for inclusion in the National Wild and Scenic Rivers System (see Table 3-25). There were no recommended "Recreation Rivers" within the analysis area. Though Hasselborg River and Lakes is within the shoreline zone and was recommended as a Wild river in the Forest Plan, it is not a part of the analysis area.

The desired condition for a Wild river, as stated in the Forest Plan, is natural, free flowing and undisturbed condition. Ecological processes and changes predominate. The values for which the river was designated remain outstanding and remarkable. Recreation users have the opportunity for primitive and semi-primitive experience, solitude, and remoteness in a natural setting. Interactions among users are infrequent, and evidence of human activities is minimal. Facilities and structures are rustic in appearance and promote primitive recreation and tourism experiences.

The desired condition for a scenic river is generally unmodified and free-flowing. Ecological processes and changes may be somewhat affected by human use. The values for which the river was designated remain outstanding and remarkable. Recreation users have the opportunity for experiences ranging from Primitive to Roaded Natural (ROS categories) in a natural-appearing setting. Resource activities within the river corridor are not visually evident to the casual observer. Interactions among users are moderate. Facilities and structures are rustic in appearance and promote semi-primitive recreation experiences and/or public safety. A yield of timber may be produced that contributes to the forest-wide sustained yield.

To date these rivers have not been Congressionally designated as Wild, Scenic, or Recreation rivers. However, recommended rivers will be managed to retain their free-flowing character and outstandingly remarkable values to maintain their eligibility for inclusion in the National Wild and Scenic Rivers System. Additional information can be found in the Forest Plan and project planning record. The miles and classification of the rivers are provided in Table 3-25.

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Table 3-25. Total Length (Miles) of Recommended Wild and Scenic Rivers in the Forest Plan That Flow Through the Analysis Area

River Name	Use Area	Classification	Total Miles/Project Miles
Katzehin River	01-01	Wild	10/10
Gilkey River	01-04A	Wild	9/9
King Salmon River	04-09	Wild	8/5
Lisianski River	04-15	Wild	5/5
Glacial River	04-04B	Wild	10/5
Kadashan River	04-12	Scenic	8/5

Description of the Rivers

Katzehin River

The mouth of the Katzehin River is six miles southeast of Haines on the east side of Lynn Canal. The river originates directly from the Meade Glacier at 500 feet in elevation and flows 12 miles west before terminating in Chilkoot Inlet. Only the upper 10 miles of the river are recommended by the Forest Plan as a Wild River. The two miles near the mouth of the river are identified as a crossing for a potential corridor for either a road or transmission line linking Juneau and Skagway. There are about 9,960 acres within the Wild River LUD designation and 5,100 acres of this LUD is in the shoreline analysis zone. The Katzehin is of geologic interest because of sedimentation from meltwater at the terminus of Meade Glacier, which is causing the river to aggrade, or build up its bed. This leads to active development of a braided stream channel. The river contains a productive run of chum salmon, which contributes significantly to the commercial fishery in Chilkoot Inlet. The river is exceptionally scenic. From the origin at the Meade Glacier, it flows through a very broad and highly braided stream channel surrounded by high mountains. A significantly large stand of coniferous forest exists on the south-facing slopes, which is unusual for a site so far north on the Tongass. Except for an abandoned Forest Service cabin located near the mouth of the river, the entire drainage is unroaded, undeveloped, and is considered inaccessible and wild for this region.

The river is outstandingly remarkable for its exceptional scenery, active geology, and productive chum salmon run.

The Katzehin River corridor is being used for guided big game hunting and fishing. One guide recorded taking four groups into this area in 1999. The river corridor is accessed by airboats from Lynn Canal and wheeled planes landing on the river's banks.

Gilkey River

The Gilkey River is located 31 miles north of the Juneau Airport. The river originates from the receding Gilkey Glacier at 100 feet in elevation and flows west, then north, for nine miles before terminating at its confluence with the Antler River. The Wild River LUD contains 7,720 acres and 4,131 acres of this LUD is in the project area. Numerous glaciers feed the river through several tributaries, and the Gilkey is of geologic interest because of current glacial activity. This river is a

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highly braided stream channel and a classic example of a glacial outwash system. The river corridor is primitive and undeveloped with no impoundments. The area receives some recreational use from Juneau residents. Wildlife characteristic of the area are similar to major coastal mountain range rivers and include moose, brown and black bear, wolf, and mountain goat. Fishery values in the drainage are considered moderate.

The river is remarkable for its geologic and scenic values.

The Gilkey River corridor is being accessed by airboats from Berners Bay for personal use. Commercial flightseeing, wildlife viewing, and kayak tours are operating in this area, especially at the mouth of the Antler River, which is part of the corridor. The owner of a cabin at the mouth of Antler River has applied for authorization to continue to occupy it. Non-commercial use of the Gilkey River corridor is estimated to be higher than other Wild and Scenic river corridors in the analysis area due to its proximity to Berners Bay, which receives a lot of recreation use by the residents of Juneau.

King Salmon River

The King Salmon River is 20 miles south of Juneau. The river originates at 800 feet in elevation and flows eight miles into a large tidal estuary in King Salmon Bay, Seymour Canal. There are 2,660 acres in the Wild River LUD and 192 acres of the LUD are in the project area. Wildlife characteristic of the area includes brown bear and deer as well as high numbers of nesting bald eagles nearby. The estuary supports Canada geese and other waterfowl. The river has the only substantial island run of king salmon in Alaska and has pink, chum and coho salmon, and Dolly Varden char. The drainage is unroaded and undeveloped and is entirely within the Kootznoowoo Wilderness. Recreational use of the river corridor is largely for deer and brown bear hunting.

This river is outstandingly remarkable for its wildlife and fish values. It has the only substantial run of king salmon on an island in Alaska. The outstanding habitat in the drainage supports an abundant population of brown bear and deer.

The King Salmon River corridor also has more non-commercial users than some of the other designated river corridors because a number of Special Uses permit cabins are located on the shores of King Salmon Bay, adjacent to the river corridor.

Lisianski River

The Lisianski River originates in a small lake at 800 feet in elevation on the divide between Lisianski Strait and the Northern Arm of Hoonah Sound. It flows five miles west before terminating in Lisianski Strait ten miles from the community of Pelican. An old trail along the river connects Hoonah Sound to Lisianski Strait. The drainage is unroaded and undeveloped and is within the Lisianski River Upper Hoonah Sound legislated LUD II area. The drainage provides habitat for brown bear and Sitka black-tailed deer among other species. The Wild River LUD contains 2,040 total acres and 233 acres of the LUD area in the project area.

This river is outstandingly remarkable for its wildlife and ecological values. The narrow band of forest along the river offers important deer habitat and is a likely travel corridor for brown bears.

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The current commercial use in the corridor consists of big game hunting, freshwater fishing and nature tours. Commercial fishing and charter sportfishing also occur at the mouth of this river. Most of the non-commercial use on the Lisianski River corridor initiates from the community of Pelican eight miles northwest of the corridor and from private inholdings along the coast of Lisianski Inlet. Pelican has a population of 163 people.

Glacial River

The Glacial River Wild River LUD contains 3,400 acres and 239 acres of the LUD are in the project area. The river originates at a glacier high on the east side of Baranof Island at 1,800 feet in elevation and flows another ten miles into the South Arm of Kelp Bay. The river passes through a steeply walled, glacial valley with impressive views of various ecotypes as the river drops to sea level. The area's characteristic wildlife includes brown bear, deer and mountain goat. The ADF&G Forest Habitat Integrity Plan rated fishery values as low to moderate. The drainage is currently unroaded and undeveloped.

The river has outstanding scenic value because of the diverse terrain it crosses and the active glaciation occurring there. The geology and ecology of the drainage are remarkable because of the variety of landforms represented.

Current use of the Glacial River corridor comes primarily from non-commercial users who anchor their boats in the South Arm of Kelp Bay.

Kadashan River

The Kadashan River originates at 400 feet in elevation and flows nine miles to the north to terminate in Kadashan Bay in Tenakee Inlet. The community of Tenakee Springs is located four miles to the north across Tenakee Inlet. The Scenic River LUD is 2,600 acres and 165 acres of the LUD is in the project area. The entire Kadashan drainage is a legislated LUD II area. The drainage is roadless and undeveloped except for a low standard gravel road and several rustic cabins. The road parallels the river (about ¼ to ½ mile from the river) for three miles upstream from the bay. The road is opened to vehicle traffic and is lightly used for recreation and subsistence access. It connects to the marine access point and Forest Service administrative site at Corner Bay and provides access into the drainage. The Kadashan drainage contains large stands of old-growth trees dominated by Sitka spruce and western hemlock. Wildlife includes large populations of brown bear and deer. The river contains important pink salmon runs, as well as Dolly Varden char, chum salmon, and steelhead. The estuary is also extremely productive. Portions of the estuarine zone and mouth of the river are private land. Alaska Department of Fish and Game (ADF&G) fisheries cabins and a Forest Service research cabin are located within the river corridor.

The fish and wildlife values of this river are outstanding and the ecological value of the large riparian old-growth spruce/hemlock stand is remarkable. Scenic values of this drainage are of importance to the community of Tenakee Springs.

The primary use of this river corridor is non-commercial use from the residents of Tenakee Springs. Tenakee has a population of 104 people.

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Recreation Opportunity Spectrum (ROS)

The Recreation Opportunity Spectrum (ROS) is used to define and manage recreation use in recommended Wild and Scenic Rivers in this analysis. (See the Recreation section of this chapter and Appendix F for more details on ROS.) The Forest Plan defines recreation standards and guidelines in terms of the ROS for encounters and group size. Commercial use will be managed under these guidelines.

Table 3-26 lists the recommended Wild and Scenic Rivers and their land corridor acreage within the shoreline zone, along with ROS classifications and number of group encounters. Maximum group size allocations within the analysis area are also specified

Table 3-26. Forest Plan Guidelines and Recommended Wild and Scenic River Corridor Area Within the Analysis Area, for All Alternatives

River Name	Use Area	River Type	ROS Class* (Acres)	Group Encounters** (Guided or unguided)	Maximum Group Size
Katzehin	01-01	Wild***	P (4,416)	Less than 3 groups/day	12
			SPNM (768)	Less than 10 groups/day	12
Gilkey	01-04A	Wild***	P (4,131)	Less than 3 groups/day	12
King Salmon (Monument Wilderness)	04-09	Wild***	SPM (192)	Less than 6 groups/day	12
Lisianski	04-15	Wild***	SPNM (153)	Less than 10 groups/day	12
			SPM (80)	Less than 10 groups/day	
Glacial	04-04B	Wild***	P (239)	Less than 3 groups/day	12
Kadashan	04-12	Scenic	SPM (165)	Less than 10 groups/day	20

*P = Primitive, SPNM = Semi-Primitive Non-Motorized, SPM = Semi-Primitive Motorized

** ROS Group Encounter direction is found in Appendix F, page 4-10.

*** Wild River Group Size direction is found in the Forest Plan page 4-41.

Existing Recreation Use of the River Corridors

This recreation use information was generated by the ranger districts on the Use Area Cards in Appendix A of the Shoreline Outfitter and Guide FEIS.

The Katzehin River corridor is being used for guided big game hunting and fishing. The river corridor is accessed by airboats from Lynn Canal and wheeled planes landing on the river's banks.

The Gilkey River corridor is being accessed by airboats from Berner's Bay for personal use. Commercial flight seeing, wildlife viewing and kayak tours are operating in this area especially at the mouth of the Antler River. A permitted pre-ANILCA cabin is located at the mouth of Antler River (Bartholow, 2004). An assumption could be made that because of the higher non-commercial use of Berner's Bay, the non-commercial use of the Gilkey River corridor is probably higher than other Wild and Scenic corridors in the project area.

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The same assumption could be made that the King Salmon River corridor has more users that are non-commercial then some of the other river corridors because a number of special use permit cabins are location on the shores of King Salmon Bay, which is adjacent to the river corridor.

Most of the non-commercial use on the Lisianski River corridor initiates from the community of Pelican, eight miles northwest of the corridor. Pelican has a population of 163 people. In addition, a number of private inholdings occupy the coast of Lisianski Inlet.

The Kadashan River corridor is located four miles from the community of Tenakee Springs. Tenakee has a population of 104 people. The non-commercial use of the Kadashan corridor emanates from this community.

The Glacial River corridor non-commercial use comes from independent boaters anchoring in the South Arm of Kelp Bay.

Comparison of Group Use in the Use Areas and Wild and Scenic Areas

In Table 3-27, current use per year within the river corridors falls well within the ROS guidelines for group encounters per day. It also displays that not all the reported commercial group use in the Use Area surrounding the river corridors is happening in the recommended Wild and Scenic areas.

Table 3-27. 1999-2001 Commercial Use in Recommended Wild and Scenic River Corridors Compared to Commercial Use in the Entire Use Area

River Name	Use Area	River Class	1999-2001 Average Actual Group Use in Use Area	1999-2001 Average Actual Group Use in River Corridor	1999-2001 Average Actual Group Use Occurring in River Corridor (%)
Katzehin	01-01	Wild	1	1	100
Gilkey	01-04A	Wild	28	0	0
King Salmon	04-09	Wild	26	2	8
Lisianski	04-15	Wild	127	14	11
Glacial	04-04B	Wild	158	0	0
Kadashan	04-12	Scenic	112	16	14

Tongass Outfitter and Guide Use Reports 1999-2001

Environmental Consequences

Direct and Indirect Effects

All effects for the action alternatives will be the same for the recommended Wild and Scenic Rivers because 1997 recreation management direction in the Forest Plan for each river is the same no matter which alternative is chosen. Once the use on the rivers becomes incompatible with the direction then the allowed use in the Use Area will directed to areas beyond the Wild and Scenic project corridors.

Further into this section, there will be a discussion about the existing 1999-01 percentage of commercial group use in the Wild and Scenic River corridors. This number will be extrapolated into the action alternatives to summarize the amount of

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group use within the Wild and Scenic corridors and to see if the ROS guideline would be met.

Wild and Scenic Project Area Seasonal Existing Use and Proposed Use

In Table 3-28, using the 1999-01 Outfitter and Guide Use Report, a percentage of Use Area group use can be associated directly to the Wild and Scenic River corridors using the location names reported by the guides. This percentage can be extrapolated though the proposed alternatives. Once the existing group use percentage was known, it was used to calculate the amount of commercial group use within the proposed Alternatives. The Alternative numbers in the table represent total commercial groups/spring, summer and fall seasons.

Table 3-28. Comparison of the 1999-01 Average Commercial Group Use in the Wild and Scenic Rivers Corridors with the Alternatives if the Percentage of Use Stayed the Same but Group Days Were Added

River Name	Use Area	1999-01 Average Actual Commercial Group Use in the Wild and Scenic Corridor	% of 1999-01 Average Actual Commercial Group Use in the Wild and Scenic Corridor	ALT	ALT	ALT	ALT	ALT
				1	2	3	4	5
Katzehin River	01-01	1	100%	N/A	513	975	98	372
Gilkey River	01-04A	0	0%	N/A	0	0	0	0
King Salmon River	04-09	2	8%	N/A	33	78	9	30
Lisianski River	04-15	14	11%	N/A	90	215	32	105
Kadashan River	04-12	16	14%	N/A	97	205	21	111
Glacial River	04-04B	0	0%	N/A	0	0	0	0

M. Nelson, 2004

Again, this table shows that using the existing condition percentage; the amount of use within the Wild and Scenic River corridors would increase dramatically in all alternatives. The last question to ask is if the increase would still be in the TLMP ROS encounter parameters on a daily bases.

Wild and Scenic Existing Daily Use and Proposed Daily Use

In Table 3-26, the total proposed groups (spring, summer and fall) per alternative was divided by 182 day (total number of days in the 3 seasons) for Alternatives 1-5 to calculate daily use of Wild and Scenic areas. The Alternative columns reflect the number of groups/day being proposed within the Wild and Scenic areas if the same percentage of commercial group use continued from 1999-01 averages into the proposed alternatives.

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Table 3-29. Comparison of 1999-01 Average Existing Commercial Use within the Wild and Scenic Corridors and the Continuation of that % of Use into the Proposed Alternatives

River Name and Use Area	Forest Plan Group Encounters Allowed/Day by ROS Class	Average 1999-01 Actual Commercial Groups in W&S Corridor/3 seasons	% of Average 1999-01 Actual Commercial Groups in the W&S Corridor/3 seasons	Average 1999-01 Actual Commercial Groups in W&S Corridor/Day (182 Days/seasons) *	ALT 2*	ALT 3*	ALT 4*	ALT 5*
Katzehin River 01-01	P<3 SPNM<10	1	100%	.01	3	5	1	2
Gilkey River 01-04A	P<3	0	0%	0	0	0	0	0
King Salmon River 04-09	SPM<6	2	8%	.01	.2	.4	.1	.2
Lisianski River 04-15	SPNM<10 SPM<10	14	11%	.1	1	1	.2	1
Kadashan River 04-12	SPM<10	16	14%	.1	.5	1	.1	.6
Glacial River 04-04B	P<10	0	0%	0	0	0	0	0

*Numbers listed represent groups/day for commercial groups in W&S Corridor/Day (182 days/seasons).

M. Nelson, 2004

Table 3-29 displays that no alternative would be over the allowable ROS group encounter per day if the existing 1999-01 commercial group uses was extrapolated into the proposed alternatives. Alternative 3 would have the greatest impact on the Wild and Scenic corridors and Alternative 4 would have the least.

Summary on Commercial Group Use

No matter what alternative is chosen, commercial group use in Wild and Scenic areas will be monitored using the annual Outfitter and Guide Use Report. Once commercial group use has been documented as being close or beyond the Forest Plan Wild and Scenic direction, these areas will be allotted for commercial group use by prospectus and bid. The commercial group use allocation through prospectus would be subtracted from the original surrounding Use Area's commercial group use allocation.

Enclaves and Large Group Areas

In no alternative have enclaves or large group areas been identified within a Wild and Scenic corridor in the project area. The closest enclave or large group area to a Wild and Scenic area would be the proposed Katzehin River enclave which is located one mile south of the river corridor.

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Cumulative Effects

The cumulative effects on the Wild and Scenic river corridors will be considered from the aspect of the existing allowable resource within surrounding LUDs.

Existing Cumulative Effects

The discussion in this document's section called "**Existing Use in the Corridors**" talks about the types of existing cumulative effects in the encompassing LUDs that affect the river corridors at this time.

In all cases, the Wild and Scenic River corridors are being used by people, guided and unguided. The guided use of the river corridors and coastline up to mean high tide mark are not being reported to the Forest Service because the state has jurisdiction over these portions of the corridor.

Future Cumulative Effects

The LUDs surrounding the project area Wild and Scenic River corridors are listed in Table 3-30. The description emphasis for guided and unguided recreation use is also present in the table.

These LUDs fall by their descriptions into the definition of non-developmental LUDs. The Forest Plan allows for some development but mostly with an emphasis on recreation activities. Each of these encompassing LUDs has management direction and guidelines that could influence the Wild and Scenic corridors for guided and unguided use but may not change the rivers Wild and Scenic values.

Table 3-30. 1997 Forest Plan LUD Names and Description Emphasis

LUD Name	Description Emphasis
Wild River	Manage recreation and tourism use and activities to meet the levels of social encounters, on-site developments, methods of access, and visitor impacts indicated for the Primitive or Semi-primitive ROS classes.
Scenic River	Provide a spectrum of recreation and tourism opportunities consistent with the capabilities of this LUD. Semi-primitive to roaded experience may be offered.
Remote Recreation	Provide for recreation in remote natural settings outside Wilderness, where opportunities for solitude and self-reliance are high.
Semi-Remote Recreation	Provide for recreation and tourism in natural appearing settings where opportunities for solitude and self-reliance are moderate to high.
LUD II	Maintain the wildland characteristics of these congressionally designated unroaded areas. Permit fish and wildlife improvements and primitive recreation facilities.
LUD II Research Natural Area	Manage areas for research and education and/or to maintain natural diversity on National Forest System lands.
Wilderness National Monument	Wilderness-Preserve essentially unmodified areas. Wilderness and Monuments-manage to provide opportunities for solitude and primitive recreation. Limit motorized access.

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In Table 3-31, the Forest Plan defines the type of major and minor recreation–related commercial development that is acceptable for each LUD. Then the “Maximum Recreation and Tourism Development” information is more specific about the types of recreation facilities and the amount of clients that would be acceptable in these LUDs (Forest Plan pages 4-39 through 40).

Table 3-31. Future Acceptable Developmental Allowed in the Wild and Scenic River Area as within the Project Area and the Surrounding LUDS

River	Surrounding LUDs	Recreation Developments		Maximum Recreation and Tourism Development Generally Allowed					
		Major	Minor	Permanent Overnight Facilities (number of Overnight Guests)	Day-use Facilities (number of users per day)	Flight-based sightseeing (number of landings per site per day)	Boardwalk Paths and Trails	Equipment Storage	Camp-grounds (# of sites per camp-ground – includes RV Sites)
Katzehin River	Wild River	not allowed	case-by-case basis	10	24	10	Yes	No	None
	Remote Recreation	discouraged	case-by-case basis	10	24	10	Yes	Yes	None
	Semi-remote Recreation	compatible	compatible	24/150 (6)	50/300 (6)	10/100 (6)	Yes	Yes	10/75 (6)
Gilkey River	Wild River	not allowed	case-by-case basis	10	24	10	Yes	No	None
	Remote Recreation	discouraged	case-by-case basis	10	24	10	Yes	Yes	None
King Salmon River	Wilderness National Monument	not allowed	not allowed	None (2)	None	3 or 6 (3,4)	Yes	None (2)	None
	Wild River	not allowed	case-by-case basis	10	24	10	Yes	No	None
Lisianski River	Wild River	not allowed	case-by-case basis	10	24	10	Yes	No	None
	LUD II	discouraged	case-by-case basis	24	50	10	Yes	Yes	10
Kadashan River	LUD II	discouraged	case-by-case basis	24	50	10	Yes	Yes	10
	Scenic River	compatible	compatible	100	300	50	Yes	Yes	40
Glacial River	Wild River	not allowed	case-by-case basis	10	24	10	Yes	No	None
	Remote Recreation	discouraged	case-by-case basis	10	24	10	Yes	Yes	None

(2) Except for ANILCA exceptions,

(3) Consistent with existing or adopted ROS class (3 for Primitive ROS, 6 in other ROS classes in Wilderness),

(4) Public helicopter landings are currently prohibited (11/96).

(6) First number is for most areas within the LUD and the second is for enclaves for recreation and tourism developments.

Forest Plan 1997, page 4-39 and 40.

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Measures to Avoid or Minimize Cumulative Effects

Before developing any type of recreation commercial facility within the corridor, a separate analysis would be completed to consider the effects on the Wild and Scenic River values.

The mitigation measures to insure concurrence with the Forest Plan would be to use the standards and guidelines ROS guidelines for Wild and Scenic Rivers LUDs and the standards and guidelines for Recreation and Tourism for commercial and non-commercial use.

To implement this direction, the commercial use will be monitored through the annual Tongass Outfitter and Guide Use report. The report would track the amount of commercial group use within the corridors, site specific. With this information, managers will be able to identify corridors that are close to the Forest Plan's parameter limitations for group use.

Once group use becomes too high or nears capacity, management would have the ability to limit the use of the corridors by limiting commercial permitted access using the bid and perspective process. When completed, this process allows only guides who are successful bidders into use the area. This method of management alleviates the concern of loss of Wild and Scenic remarkable values through recreation commercial use.

Summary of Issues in the Wild and Scenic River Areas

Commercial verses Non-commercial Use of the Recreation Resource

The Wild and Scenic River direction in the Forest Plan allows for an allotment of 50% of the Shoreline carrying capacity (2001) to commercial users. The Forest Plan also provides for quality recreation opportunities in the river corridors by managing through the ROS direction. Even with the expansion of possible use of the corridors, the carrying capacity incorporated the Forest Plan Recreation Opportunity Spectrum direction so the ROS experience will not change for the commercial or the non-commercial users. The allotment for commercial group use within these corridors will be monitored for compliance and mitigated accordingly.

Economic Opportunities and Potential Impacts to Commercial Outfitter/Guides

In the alternatives, the allowable carrying capacity for commercial group use on these corridors has not been exceeded. The opportunity exists in each alternative to allow growth in commercial group use if management desires this action. This would increase the economic opportunities and have a positive financial impact for outfitters/guides.

Conflicts within the Commercial Recreation Industry

A possible conflict exists between recreation industry users because if the commercial group use becomes too high in the river corridors, the prospectus and bid process will decide the use allocation. The commercial operators that were allotted the commercial group use of the area would have exclusive use of the area.

Another possible conflict between industry groups could be the group sizes the companies allow on their tours. With the Forest Plan direction on the Wild Rivers of

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only allowing a 12 people in a commercial group, this direction would not allow use by the larger tour group companies in the Wild River corridors.

Other Environmental Considerations

Introduction

This section describes resources and other considerations that would remain largely unaffected by the proposed action or alternatives. Concerns about many of these resources were raised during scoping. The Forest Plan has addressed the management implications of most of these resources through the establishment of forest-wide standards and guidelines, which are designed to prevent, reduce or mitigate adverse impacts at the project level.

Biodiversity

Overview

Biological diversity is the variety of plant and animal communities and species within an area, along with associated ecological processes. Biodiversity encompasses a variety of genetic stocks, plant and animal species and subspecies, ecosystems, and ecological processes through which individual organisms interact with one another and their environments. Changes in biodiversity occur through natural processes and human activity. Effects of management activities on biodiversity are also described in other sections of this document, such as Soil, Vegetation and Wildlife. This discussion describes biodiversity by ecological subsections, vegetation types and the Old-growth Reserve Network.

Affected Environment

Ecological Subsections

There are three terrain classes in the analysis area: active glacial, inactive glacial, and post-glacial. Active glacial terrains are those land areas that are currently affected by glacial processes of ice accumulation and movement, meltwater streams with heavy bedloads and deglaciated areas of primary succession. Inactive glacial terrains developed after the retreat of the continental ice sheet some 14,000 years ago. Post-glacial terrains developed under other geologic processes, such as volcanic eruptions. Within these three terrain classes are physiographic and geologic classes, which further refine the building blocks of biological diversity. The analysis area has a diversity of ecological subsections ranging from limestone to volcanics, which support a variety of vegetation types (see Table 3-32).

Vegetation Types

Approximately 89 percent of the shoreline zone in the analysis area is forested. The remainder of the area is muskeg, natural grasslands, rock, brush fields and avalanche chutes. Avalanche tracks, brush fields and bare rock areas are common in the ecological subsections along the mainland and the steeper sections of Baranof Island. Muskegs are well represented throughout the analysis area in ecological subsections that are flat and have extensive glacial marine sediments or volcanics. Natural grasslands are one of the more rare vegetation types. Alpine and ice snowfields are uncommon adjacent to the shoreline.

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Natural grasslands are more accurately described as estuarine meadows and uplifted beach meadows. These vegetation types have a high diversity of vascular plant species. They are important not only because of their plant diversity but also because they are relatively rare in the analysis area and on the Tongass National Forest. Most of the sensitive species occurring in the analysis area occur in these habitats. In addition, estuarine meadows support berries that are of high value to both brown bears and humans.

Table 3-32. Ecological Subsections of the Shoreline Outfitter/Guide Analysis Area

Ecological Subsection Names	Forested Shore Zone (acres)	Harvested Shore Zone (acres)
Berg Bay Complex	3,976	0
Boundary Ranges Icefields	70,287	0
Cape Fanshaw Complex	2,621	16
Central Baranof Metasediments	35,326	1,113
Chilkat Peninsula Carbonates	32,536	1,399
Freshwater Bay Carbonates	36,781	2,252
Holkham Bay Complex	97,269	225
Hood-Gambier Bay Carbonates	47,609	0
Kook Lake Carbonates	18,056	2,965
Mitchell-Hasselborg Till Lowlands	20,439	0
Mount Edgecumbe Volcanics	14,092	727
Necker Bay Granitics	39,199	119
North Admiralty Complex	15,366	0
North Baranof Complex	32,668	4,774
North Chichagof Granitics	61,351	1,082
Outer Coast Wave-cut Terraces	79,113	2
Peril Strait Granitics	39,449	4,053
Point Adolphus Carbonates	18,182	516
Sitka Sound Complex	58,976	3,191
South Admiralty Volcanics	41,641	0
South Baranof Sediments	36,399	0
St. Elias-Fairweather Icefields	3,004	532
Stephens Passage Glaciomarine Terraces	107,966	32
Stephens Passage Volcanics	26,541	0
Stikine-Taku River Valleys	11,858	0
Thayer Lake Granitics	3,306	0
Ushk-Patterson Bay Granitics	26,242	1,053
West Chichagof Complex	30,504	0

There are few areas in the shoreline zone that have not been influenced by some type of natural or human-caused disturbance. About 24,000 acres (2.4 percent) of the analysis area has been harvested since 1954 and exists as even-aged stands. Timber harvest either by selective or clear-cut methods, occurred before 1954 throughout much of the analysis area. Under the current Forest Plan, logging is not allowed within 1,000 feet of beach or estuary fringe or within riparian buffers. See Appendix

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E for Forest Plan land use designations governing future management activities within the shoreline zone.

Old-Growth Habitat Reserve Network

Old-Growth Habitat Reserves were developed through the forest planning process as part of a comprehensive conservation strategy to assure long-term species viability. A network of small, medium and large old-growth habitat reserves was distributed across the national forest to maintain connections between quality habitat areas. Non-development LUDs, beach fringe and riparian buffers contribute to the conservation strategy by maintaining overall landscape connectivity. Non-development LUDs in the analysis area include extensive areas of wilderness, old-growth habitat, remote recreation, semi-remote recreation, Wild and Scenic River, LUD II and special interest areas. Habitat connectivity eases travel for wildlife species between areas of quality habitat.

Environmental Consequences

Direct and Indirect Effects

Effects on biodiversity are best measured at the landscape or forest level. None of the alternatives' guided recreation activities or use levels are expected to have any measurable effect on biodiversity at these levels. At a site-specific level, guided recreation activities could have potential effects by trampling or crushing native vegetation and by introducing non-native plant species.

Direct effects are expected to be slight and localized. The most vulnerable vegetation types are the upper estuarine meadows and uplifted beach meadows. People walking through meadows could trample herbaceous vegetation. Herbaceous vegetation could also be trampled in the understory of forested areas; however people would be more likely to stay on existing trails. Trampling vegetation would have little effect within the forest canopy.

Bare ground resulting from the trampling of vegetation and introduction of non-native plant species by wind or humans could create areas where introduced species can out-compete native plants and become invasive and/or noxious weeds. Invasive weeds would have a greater negative effect on the meadows than on the forests, because invasive weeds would not survive well under the limited light of the forest canopy. Hemp nettle, *Galeopsis tetrahit*, is a noxious weed that is currently established in meadows in Idaho Inlet and the south end of Admiralty Island. Invasive weeds would have a higher potential of developing in and around areas containing estuarine and uplifted beach meadows with high levels of recreation use. These areas would potentially have more recreation use, which increases potential of exposed or disturbed soil and the introduction of weed seeds.

The creation of multiple footpaths could to small-scale habitat fragmentation and lead to a minor reduction of species richness. On a larger scale, disturbances created by an influx of guided visitors could cause some daily or seasonal reductions of habitat connectivity by disturbing some animal species.

Higher numbers of people visiting sites would boost chances of vegetation trampling and non-native plant introductions during the growing season. Alternative 3 would have the greatest potential to have such effects. Alternative 4 would have the least potential to negatively affect biodiversity. Alternatives 2 and 5 would have similar

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potential effects on biodiversity since similar levels of commercial use would be allocated.

Cumulative Effects

Timber harvest has changed stand structure. Depending on the size of openings created, plants that previously occupied sites were re-established or plants currently occupying sites were able to regenerate. Many areas of past timber harvest have regrown and are often mistaken for pristine forest. A small portion of the analysis area is available for timber harvest in the future. The allocation of recreation use would have no cumulative effect on reforestation of timber harvest areas.

Past recreation use has had little adverse effect except in small, localized areas where use has been concentrated and unmanaged. Mitigation measures proposed under the action alternatives would reduce even these minor impacts. If adverse effects should occur, guided recreation use would be limited or restricted, or the site would be hardened to reduce impact. Thus, there would be no measurable cumulative effect from recreation use. On the coarse scale over the analysis area, guided recreation use proposed under the alternatives would have no effect on biodiversity. Effects on local-scale components of biodiversity are disclosed in the following sections.

Soils

Overview

Soils are the foundation of terrestrial ecosystems. Soil absorbs nutrient-rich water and releases it to microorganisms and plants, which become food and habitat for larger animals and people. Soils are a non-renewable resource because of the time it takes for them to form. There are many types of soils, and their specific properties determine the type of ecosystem they support and their resiliency to land management.

Affected Environment

Soil types

Soils in the analysis area developed from a variety of unconsolidated and weathered mineral or organic parent materials. Mineral soils develop from weathered rock, and organic soils develop from decomposed plant materials. Topography, climate and vegetation play important roles in the development of soil.

Mineral soil originates from bedrock that either weathered in place or was transported and deposited away from its place of origin. Mineral soils typically are covered with an organic layer ranging from a few inches to several feet thick. Several classes of mineral soils exist in the analysis area, including glacial till and alluvial, colluvial, and residual soils.

Because of the high amount of precipitation and low temperatures in the analysis area, organic materials accumulate faster than they decompose, resulting in creation of thick organic layers. Organic deposits range from about an inch to more than 40 feet in depth. Organic soil development is greatest on level terrain but is also found on rolling hills and moderately steep, to steep slopes. Organic soils are often found covering glacial deposits on relatively flat valley bottoms. Most organic soils in the project area are classified as wetlands.

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Tree growth, wildlife and fish habitat, and recreation opportunities are all influenced by soil quality.

Soil Productivity

Soil productivity is the inherent capacity of a soil to support the growth of specific plants or plant communities. It is critical to the forest because it affects the productivity of most other forest resources. Soil productivity is a product of soil quality and can be affected by on-site disturbances ranging from natural erosion and landslides to human-related disturbances, such as roads, boat ramps, recreation trails and picnic areas. Tree growth, wildlife and fish habitat, and recreation opportunities are all influenced by soil quality.

Soil productivity varies between soil types. In mineral soils most nutrients are produced and stored in the upper organic layers. Soil drainage, texture, depth, and site characteristics (including elevation, slope, and aspect) all determine the soil's productivity. The most productive soils, which generally support coniferous forest stands, are well drained to moderately well drained and moderately deep. They are found on floodplain terraces, moderately stable alluvial fans, hillslopes, mountain slopes, and uplifted beaches.

Most organic soils are found in non-forested and forested wetlands that support low-volume forest, scrub-shrub, peat lands and alpine meadow plant communities. Organic soils are not considered highly productive, in terms of timber stand volume, but they are productive in terms of species richness and biomass. Poorly to very poorly drained organic soils support a wide variety of plant communities with high biomass and species diversity, and they are home to many species of fish and wildlife.

Environmental Consequences

Direct and Indirect Effects

Guided recreation activities are not expected to have any significant effects on soils because of the relatively low impacts of the activities and the low levels of use across the analysis area.

Recreation management practices that tend to reduce soil productivity include construction of roads, trails and campgrounds. Loss of productivity is caused by removal of surface organic layers and disturbance of surface and subsurface layers. The recreation activities proposed in the alternatives do not involve any construction or ground-disturbing activities and will not have an effect on soil productivity.

Some amount of soil disturbance is an unavoidable consequence of recreation use on the land due primarily to trampling. The level of disturbance varies with management practices and site characteristics. Soil Quality Standards (FSM 2554) address the potential of affecting soils from compaction, puddling, displacement, surface erosion, altered wetness, and damage by severe burning. Soil Quality Standards are national standards that set the limits on the amount of an activity area that can be in a disturbed soil condition. The Soil Quality Standards in the shoreline zone limit soil disturbance to 15 percent of the activity area. Any greater soil disturbance, exceeding the standards, constitutes significant impairment to the productivity of the land. The effects of soil disturbance are minimized through the implementation of Best Management Practices (FSM 2509.22) and mitigation measures provided in Appendix C.

The effects of recreation use on soils are not well documented. However, the guided recreation uses proposed in the alternatives are not expected to have any significant direct or indirect effects on soils because of the relatively low impacts of the activities and the low levels of use spread across the analysis area.

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All alternatives would meet or exceed Forest Plan standards and guidelines. Recreation activities proposed in the alternatives might have minor effects depending on the amount and type of guided activity that actually occur and the soil type on which it would occur. These effects would be mitigated with Best Management Practices and protection measures listed in Appendix C. Monitoring would indicate when recreation use approaches Soil Quality Standards. If adverse effects on the soil resource should be noticed, recreation use will be limited or restricted or the site will be hardened to prevent or mitigate adverse soil effects.

Cumulative Effects

Cumulative effects of the proposed actions on long-term soil productivity are directly related to the amount of soil disturbance that occurs through time and the amount of recovery that takes place in the soil system in that time. Since the alternatives do not propose any activities that cause soil disturbance, no cumulative effects are expected.

Minor soil disturbance, erosion, and the associated loss of productivity resulting from the proposed activities could occur from recreation use. Most effects of recreation would be relatively short term; they would last until disturbed sites recover with indigenous species sufficient to protect the soil surface and maintain soil productivity. Any necessary re-vegetation of disturbed sites, either through natural regeneration or by planting, would depend on the level of disturbance at each site.

Cumulatively, the level of soil disturbances from guided recreation use within each Use Area or large group area is estimated to be far less than 1 percent of these areas. It would not exceed or approach the Soil Quality Standard of 15 percent of the area.

For additional information related to soils, see the water quality, biodiversity, vegetation, and wetlands sections of this chapter.

Overview

Wetlands are “those areas that are inundated or saturated by surface or groundwater with a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (40 CFR 230.41(a)(1)). Wetlands are sites that generally have both saturated soils for at least a portion of the year and vegetation that is adapted to saturated conditions. Wetlands are valued for their physical, chemical, and biological functions. Wetlands moderate flooding, reduce runoff and sedimentation, provide wildlife and plant habitat, and sustain stream flow during dry periods. Physical functions include flood conveyance, surface and ground water regulation, sediment retention, and temperature moderation. Chemical functions include nutrient storage, pH moderation, and carbon storage. Biological functions include habitat for terrestrial, aquatic, and marine plants and animals.

Affected Environment

Distribution and Types of Wetlands

Approximately 30 percent (302,416 acres) of the analysis area is wetlands, which include deepwater habitats such as lakes and ponds (USFWS National Wetland Inventory). Deepwater habitats are more fully described in the fisheries and water

Wetlands

Approximately 30 percent of the analysis area is wetlands.

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No dredging or filling of wetlands is proposed; therefore, effects on wetlands due to guided recreation activities would be very limited.

quality section. Wetlands may be underestimated by 15–20 percent because wetlands less than one acre were not mapped and forested wetlands are not often detected in the mapping process. Different wetland types are found from sea level to mountaintop. Resource values associated with these wetlands vary, depending on biological qualities, proximity to water bodies, and the position on the landscape.

Wetlands are classified into five major systems: marine, estuarine, riverine, lacustrine, and palustrine (Cowardin et. al. 1979). This analysis focuses on four systems because the Forest Service does not administer activities in marine or subtidal estuaries. The intertidal estuarine system is where freshwater systems meet marine ecosystems, creating a brackish environment. Estuarine wetlands support complex and productive ecosystems critical to fish and wildlife. Riverine wetlands are fresh water habitats within river and stream channels. Lacustrine wetlands include the deepwater habitats of lakes deeper than six feet and larger than 20 acres. Palustrine wetlands are characterized by saturated soils and are typically referred to as marshes, bogs, muskegs, fens, and forested wetlands. Palustrine emergent wetlands support rooted, herbaceous plants adapted to saturated soils. They function as areas for recharge of groundwater and streams, deposition and storage of sediment and nutrients, and support a diversity of plants and resident and migratory wildlife. The two most valuable wetlands in the analysis area are palustrine emergent and estuarine wetlands. Table 3-33 displays the wetlands in the analysis area.

Table 3-33. Wetlands in the Shoreline Zone

Wetland Systems and Subsystems	Wetland Acres	% of Project Area
Intertidal Estuarine	14,954	1.5
Riverine		
Tidal	844	0.09
Perennial	6,324	0.6
Total Riverine	7,168	0.7
Lacustrine		
Lakes, ponds, aquatic beds and shores	4,935	1.0
Palustrine		
Moss-lichen	980	0.1
Emergent	48,714	5.0
Scrub-shrub	34,160	3.4
Forested	186,933	19.0
Total Palustrine	270,787	27.5
Total	297,844	30.8

Management Activities on Wetlands

Executive Order 11990, as amended, requires federal agencies to avoid to the extent possible the long- and short-term adverse impacts associated with the destruction or modification of wetlands. The Forest Plan includes standards and guidelines intended to avoid or minimize the loss of wetland area and to maintain and/or enhance the values and functions of existing wetlands (USDA Forest Service 1997b; p. 4-111). No dredging or filling of wetlands is proposed in any alternative.

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Environmental Consequences

Direct and Indirect Effects

No dredging or filling of wetlands is proposed under any alternative; therefore, effects on wetlands due to proposed recreation activities would be very limited. Guided recreation users generally avoid activities in wetlands because ground conditions are not conducive to easy or comfortable travel or camping. If guided recreationists travel across wetlands, the primary effect on wetlands would be linked to soil disturbance. Wetland area affected by recreation activity would be low across the analysis area but would vary at specific sites. The amount of disturbance and degree of effect would be relative to the number of visitors and frequency of visits to the site. Effects on wetlands would be mitigated (Appendix C). If adverse effects should occur, guided recreation use will be limited or restricted, or the sites will be hardened to prevent the effects.

The following sections discuss potential minor effects:

Wetland Vegetation Loss of wetland vegetation would be a temporary effect on any type of wetland located in areas of intensive foot travel. This effect would be more prevalent at the large group areas where visitors would concentrate. Alternative 3 allocates the highest use and the most large group areas and would therefore have the highest potential of short-term vegetation loss, followed by Alternatives 5, 2, 4, and 1.

Erosion and sediment and higher sediment loads in runoff would be expected where vegetation is trampled and mineral soils are exposed. Increased erosion rates and higher sediment loads would not result from the implementation of this analysis since wetland soils are organic and not mineral.

Puddling of organic soils Trampling of vegetation and disturbance of the organic mat overlying organic soils would cause the soils to puddle. Puddling is the loss of soil structure, which decreases water movement through the soil. It causes water to remain at the surface and reduces plant growth. Puddling effects are expected to be minor and very limited in extent. The potential for soil puddling is highest in large group areas and in alternatives with the highest allocation of use. Alternative 3 has the highest potential to cause soil puddling followed by Alternatives 5, 2, 4, and 1.

Altered wetness Draining or ponding of the wetland can alter the water regime of a wetland. Altered wetness due to drying would not be an effect of any action resulting from this analysis. Ponding may result from heavy foot traffic, which would restrict water movement through the soil. This would be limited to a very small area with a minor, short-term effect. As with the other types of disturbance, the potential to alter wetness is related to the level of commercial use. Large group areas have the highest potential to alter wetness, as do alternatives that allocate the highest use. Alternative 3 would have the highest potential to alter wetness followed by Alternatives 5, 2, 4, and 1.

Loss of flood control None of the alternatives would affect wetland flood flow or the potential of wetlands to moderate floods.

Loss of wetland wildlife habitat Loss of wildlife habitat in wetlands would be temporary and seasonal because of the regeneration of vegetation and disturbance or displacement during commercial use seasons. Those alternatives that allocate large

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group areas or have high group allocations have the highest potential to adversely affect wetland wildlife habitat. Alternative 3 has the highest potential followed by Alternatives 5, 2, 4, and 1.

Cumulative Effects

Because of the vast expanse of wetlands within Southeast Alaska, the cumulative effects of the proposed alternatives and other projects on wetlands would be minor. Many of the prime wetland habitats on the Tongass National Forest have been protected either by land use designations or by standards and guidelines specifically addressing wetlands. Few long-term cumulative effects would occur because vegetation would regenerate, and the implementation of Best Management Practices and mitigation measures would be required on project proposals. There would be no anticipated effects on the form or function of wetlands within the shoreline zone.

Vegetation

Overview

The shoreline zone is a mosaic of estuary plant communities, beach meadows, muskeg, shrubland and coniferous forest. The type and amount of vegetation that grows in the analysis area is influenced by the parent material and drainage of the soil. Poorly drained soils result in the development of non-forested muskeg or scrub forests, and well-drained soils result in heavily timbered forests. For additional information, see the biodiversity, soils, wetlands, sensitive species, and water quality sections of this chapter.

Affected Environment

Plant Communities and Cover Types

Non-forested Plant communities in estuaries vary depending on soil drainage, duration of flooding, and water salinity. Tides flood the upper reaches of the estuaries only one to three times in a month. Plant communities are represented by red fescue/mixed forb, hairgrass/mixed forb, and bluejoint/fireweed/mixed forb types. Palustrine wetlands with sedges, mixed forbs, and sphagnum are often found in areas that have recently been uplifted, and are poorly drained.

Uplifted beach meadows are very common around Icy Straight and Lynn Canal in the northern portion of the analysis area. Mixed forb community types dominate these well-drained surfaces. Some of the dominants include cow parsnip, fireweed, wild strawberries, and yarrow. The upper estuarine meadows and the uplifted beach meadows have some of the highest vascular plant diversity of any community types on the Tongass.

Muskegs are found behind the forested fringe in many parts of the analysis area, especially on the Gastineau Formation (glaciomarine clays and silt) around Juneau. This parent material is poorly drained and flat, which develops into muskeg and poorly growing forests.

Shrublands occur in areas that are very steep such as where avalanches are common, as along Lynn Canal. Sitka alder and salmonberry generally dominate these slopes. Small patches of willows and alders also occur within some of the estuaries.

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Forested The forests on Admiralty, Baranof, and Chichagof Islands have been described in the Forest Plant Association Management Guide (Martin et al. 1995). Soil drainage and amount of salt spray are the main determinants of the type of forest that develops. In general, Sitka-spruce-dominated forests are adjacent to the shoreline and other trees dominate the forests further inland. Sitka spruce has a competitive advantage in these areas because the seed is able to establish on mineral soil and it is more salt tolerant than other Southeast Alaska conifers. There tends to be exposed mineral soil in these areas because frequent windstorms blow trees down and landforms continuously uplift because of plate tectonics and glacial retreat.

In many places along the shore, there are uplifted wave-cut terraces behind the modern beach fronted forest that rises 1½ to 3 feet (5 to 15 meters). On top of this terrace, the forest is often dominated by western hemlock and has a blueberry and skunk cabbage understory. Further back from the beach, the productivity often declines into a mixed conifer stand if the parent material is poorly drained and the slope is gentle.

The shoreline around Lynn Canal supports plant species adapted to well-drained soils. Paper birch forests occupy the thinner rocky shorelines in the Haines and Skagway areas. Other species such as Scouler's willow and cottonwood are also in the overstory of many forests.

Vegetation types will gradually change through natural succession. Disturbances created by floods, high winds, landslides, and avalanches impede the natural succession process and maintain current vegetation types on some sites. Other plant communities gradually become forests through the natural succession process. The highest uplifted beach meadows and estuary meadows are becoming forests as spruce encroaches in these areas. Conifers dominate cottonwood/spruce forests as the cottonwood die.

Environmental Consequences

Direct and Indirect Effects

Recreation use can affect the vegetative characteristics of an area. Repetitive use by people can result in an increased rate of plant mortality through soil compaction; physical injuries to trees; and trampling of shrubs, grass and forbs. In riparian zones, loss of cover can destabilize stream banks. Plants are most susceptible to disturbance in the summer season when they are actively growing.

Effects on plant communities vary with the species, soil type, and vegetation type. Generally, graminoids (grass-like plants such as sedges, rushes, and grasses) are more resistant to trampling than are broad-leaf herbs. For example, as few as 25 one-way passes reduced relative vegetation cover by more than 50 percent in a trampling study in a broad-leaved, herb-dominated subalpine meadow in Washington state; in a nearby alpine sedge meadow, 75 passes caused no cover change (Cole and Trull 1992). Vegetation type and species also influence recovery from trampling, with some types recovering completely after one year, and others still exhibiting reduced vegetative growth (Cole and Trull 1992). The effects of recreation on vegetation have not been well studied in Southeast Alaska.

Beach meadows and upper estuary meadows generally are the most susceptible to trampling because they are broadleaf and graminoid plant communities. Because of

Effects on plant communities vary with the species, soil type, and vegetation type. These effects are not well studied in Southeast Alaska.

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their relatively flat topography and open vistas, they are desirable places to recreate and often receive more use than other areas of the forest. These meadows tend to be in early successional stages due to the disturbance of the glaciers and tidal flooding, and they are some of the most limited plant community types on the Tongass. Forests are a much more common feature along the shore, have less species diversity, and are more resilient to trampling.

Vegetation in Southeast Alaska has generally evolved to withstand trampling and grazing. Vegetation grows rapidly and lushly during the growing season due to the large amount of rainfall and relatively mild temperatures. Plants generally recover quickly from disturbance. Effects on plant communities from guided recreation use are likely to be minimal since the recreation activities are generally of low impact, of short duration, and do not involve ground-disturbing activities. Guided recreationists tend to disperse throughout the analysis area and avoid concentrating unless there is a specific attraction. Some areas may receive more concentrated use and would require site hardening or limits to use once use levels begin to show adverse effects on the vegetation. Large group areas could also have more people at one time in a limited area, resulting in more potential for impacts on vegetation. Enclaves could have regularly occurring large group use, while Fifteen-Percent areas would have only occasional large group use.

The following paragraphs discuss possible effects from guided recreation activities:

- Frequent use of a site may lead to creation of informal footpaths and trails and changes in plant community composition or loss of soil integrity, thereby decreasing the size and vigor of the affected plant communities.
- There is a potential for recreationists to introduce exotic plants by carrying seeds or viable fragments on clothing or camping gear. Some of these exotic species could compete with native plants for available habitat. Species that are spreading on the forest are dandelions, widespread in Lynn Canal, but uncommon on the islands, and Hemp nettle, which is established at one popular site on the Hoonah District and is also common at the southern tip of Admiralty Island.

Most effects on vegetation from guided recreation use proposed in the alternatives can be mitigated. Forest Plan standards and guidelines for the beach and estuary fringe (USDA Forest Service 1997b, p.4-4) will be applied to guided use. Best management practices (BMPs) will apply to recreation activities. Mitigation measures include restrictions on camping and plant collecting, guidelines for hiking, and the use of Leave No Trace practices. No plant collecting would be allowed in large group areas. See Appendix C for more information on mitigation measures. Sites would be monitored for adverse effects on vegetation (see Appendix D). Recreation use on sites showing excessive trampling, barring of soil or reduction in species richness would be limited or restricted. Another option would be hardening the sites to prevent effects. Sites with evidence of a noxious weed problem would be included in the forest weed control program.

It is difficult to accurately predict effects of guided recreation use on vegetation. Both guided and unguided recreation uses are expected to increase. In general, the total commercial capacity allocation during the summer season is the best measure

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for potential risk of negative effects. Higher allocations could result in higher use levels resulting in higher potential effects to vegetation. Alternative 3 has the greatest potential to affect vegetation because it has the highest allocation during the summer and proposes the most large group areas. Alternative 5 has the second highest potential because it has the second highest allocation and number of large group areas. Alternative 2 has the third highest potential but does not propose large group areas. Alternative 4 has the lowest potential because it has the lowest allocation and has few large group areas. Alternative 1 does not provide a specific allocation, although it could be similar to Alternative 3. Alternative 1 does not identify large group areas.

Cumulative Effects

Along with effects of guided and unguided recreation use, natural plant succession and disturbance will continue in the shoreline zone. Vegetation will be trampled or grazed by wildlife. Exotic plant species may be introduced by other human activity. There is limited future development activity expected within or adjacent to the national forest that would have a significant effect on vegetation resources. Cumulative effect on vegetation is not expected to be significant.

Wildlife

Overview

The Tongass National Forest provides habitat for 54 species of mammals, 231 species of birds and 5 species of amphibians and reptiles. There are an additional 18 species of marine mammals found in Southeast Alaska which depend entirely on the ocean environment. There are also 45 bird species and 3 amphibian or reptile species considered casual or accidental visitors to Southeast Alaska (USDA Forest Service 1997a). Many of these species inhabit the project area.

Wildlife is found across a diverse range of land types and plant communities and is adapted to climatic extremes, changes in habitat, predation and hunting pressure. This results in a project area rich in both species and habitats. This richness is appreciated and valued by people. Wildlife may be viewed and photographed; harvested for sport or subsistence purposes; and valued for spiritual or ecological reasons.

Affected Environment

Wildlife Habitat

Habitat is the environment in which a wildlife species occurs. It is described in physical and biological terms, which include elevation, topography, forest structure, and vegetation type. A wildlife species may occupy a range of habitat types at various times of the year. Important habitat types that occur in the analysis area include beach fringe, estuary fringe, old growth, second-growth and riparian areas.

Beach Fringe Habitat Beach fringe is the strip of land within a 1,000-foot horizontal distance inland from the saltwater shoreline, not including estuaries. It is a transitional zone between land and water, salt water and fresh water, and vegetated and non-vegetated conditions (USDA Forest Service 1997a). Forested areas in this transition zone receive heavy use by species that have high economic, recreational, subsistence, or aesthetic values. Brown bear, river otter, bald eagle, marten, and Sitka black-tailed deer are typical species that concentrate their activities in these forest stands during some or all seasons of the year.

Important habitat types that occur in the analysis area include beach fringe, estuary fringe, old-growth, second-growth, and riparian areas.

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Estuary Fringe Habitat Estuary fringe is the land within 1,000-foot horizontal distance around river mouths or estuaries. It is similar to beach fringe but because of its species diversity it has greater value to wildlife, especially brown bears, river otters, mink, bald eagles, and waterfowl.

Old-growth Habitat For this EIS, old-growth habitat refers to inventoried forest stands with a timber volume greater than 8,000 board feet per acre and having trees which are at least 150 years old, with an average diameter at breast height larger than nine inches. Old growth forests typically possess the following characteristics:

- Large trees, with wide variation in tree sizes and spacing;
- Accumulations of large, dead, standing and fallen trees;
- A high incidence of trees with broken or deformed tops, disease, and decay; and
- Multiple canopy layers, with canopy gaps and understory patchiness.

These characteristics and the spatial arrangement of old-growth habitat influence the function of the ecosystem. Old-growth forests are important habitat for many species of wildlife, including brown bears and bald eagles.

Second-growth Habitat Second-growth habitats are even-aged stands less than 150 years old that have been commercially harvested. Second-growth habitat is of lower value to most wildlife species because conifer seedlings aggressively invade and eventually shade out desirable herbaceous vegetation (food plants).

Riparian Habitat Riparian areas occur along rivers and streams or around inland lakes, and contain elements of both aquatic and terrestrial ecosystems. These areas are important migration routes for some wildlife species, such as brown bears, because of the presence of food, water, and cover.

Management Indicator Species

Wildlife management indicator species (MIS) are species whose responses to land management activities can be used to predict the likely response of other species with similar habitat requirements. By using the MIS concept, the total number of species to be analyzed within a project area is reduced to a manageable set that collectively represents the complex of habitats, species, and associated management concerns. MIS are also used to help establish management goals for species in public demand, such as brown bear for sport hunting and subsistence uses. The Forest Plan standards and guidelines include the use of management indicator species to evaluate the potential effects of proposed actions affecting wildlife habitat (USDA Forest Service 1997).

The MIS chosen for this project are brown bear and bald eagle. Outfitter and guiding activities may affect these two species, as recognized in comments from the public. Brown bears and bald eagles are also associated, at least to some degree, with the habitats found along the shoreline.

The Forest Plan identified thirteen terrestrial MIS for the Tongass National Forest. Most, if not all, of these species are present in the project area. Some of these species are difficult to monitor, would not be affected by the proposed activities, would have their habitat needs provided for by the standards and guidelines in the Forest Plan, or could be represented by other MIS.

Wildlife management indicator species (MIS) are species whose responses to land management activities can be used to predict the likely response of other species with similar habitat requirements.

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Brown Bear, *Ursus arctos* Brown bears are common in Game Management Unit (GMU) 4 and less common in mainland GMUs 1C and 1D. Game Management Units are delineated by the Alaska Department of Fish and Game to facilitate their wildlife management activities (See the annual *Alaska Hunting Regulations* booklet for additional information.). Brown bears commonly use habitats from sea level to the alpine zone. The habitat capability model currently in use identifies the late summer season as the most critical or limiting period for brown bears. During this season, many brown bears concentrate along low-elevation valley bottoms and streams, feeding on salmon and other edibles to put on enough weight for the winter. These are often the same areas of high human use, including deer hunting and brown bear viewing. During this season, brown bears use all of the habitats available to them, with estuaries and riparian areas having the highest habitat value.

The analysis area has about 1.6 million acres (in all land ownerships within the shoreline zone) within brown bear habitat. The ADF&G estimates that there are approximately 4,155 brown bears in GMU 4 alone (Chichagof and adjacent islands, 1,550 bears; Baranof and adjacent islands 1,045 bears; and Admiralty Island, 1,560 bears) (ADF&G 1999). ADF&G has conducted extensive brown bear studies in GMU 4 for many years; however, no such research has been undertaken on Southeast Alaska's mainland. Based on "anecdotal hunter reports, department staff observations, and sealing records," ADF&G reports that mainland brown bear populations are considered to be stable over the past several reporting periods (ADF&G 1999).

In 2004, the Forest Service and ADF&G signed a Master Memorandum of Understanding (MMOU) "to define a wildlife and fish conservation program on National Forest System lands which recognizes agency responsibilities and areas of cooperation and coordination." The Forest Service "Recognize(s) the Department as the agency with the authority, jurisdiction, and responsibility to manage, control, and regulate fish and wildlife populations on National Forest System lands unless such authority is superceded by federal law." ADF&G, "Recognize(s) the Forest Service as the agency responsible for the management of National Forest System lands in Alaska and the fish and wildlife habitats on these lands" (USDA Forest Service 2004).

Hunting regulations for brown bears, which includes seasons and bag limits, are determined by the Alaska Board of Game (ABOG) and implemented and enforced by the ADF&G and Fish and Wildlife Protection Troopers. The intent of these regulations is to ensure that sustainable populations of wildlife species are available for human consumption and enjoyment in perpetuity (See *Alaska Hunting Regulations* for current hunting regulations, including seasons and bag limits.). Commercially guided hunts on the national forest must comply with all state hunting regulations and harvest limits.

Brown bears are also considered a subsistence resource and are subject to regulations determined by the Federal Subsistence Board (FSB) in a process similar to the Alaska Board of Game process. (See *Subsistence Management Regulations for the Harvest of Wildlife on Federal Public Lands in Alaska* for current regulations.) Commercially guided hunting on the national forest must comply with all federal hunting regulations and harvest limits.

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ADF&G also sets management objectives by GMU; this direction is displayed in the *Federal Aid in Wildlife Restoration Annual Performance Reports and Management Reports* (ADF&G 1999, 2000a). Management objectives for GMU 1 include:

- Maintain an average age of annually harvested males no less than 6.5 years, with a male-to-female harvest ratio of at least 3:2, and
- Reduce the number of bears killed because of garbage habituation.

Management objectives for GMU 4 include:

- Maintain an average age of harvested males of at least 6.5 years with a male-to-female harvest ratio of at least 3:2,
- Reduce the number of bears killed because of garbage habituation (as modified in the 2000 annual report),
- Monitor the harvest, seal harvested bears, and analyze harvest data (as modified in the 2000 annual report), and
- Monitor use of the Pack Creek viewing area on the Stan Price Wildlife Sanctuary (as modified in the 2000 annual report). This area is outside the project area for this EIS.

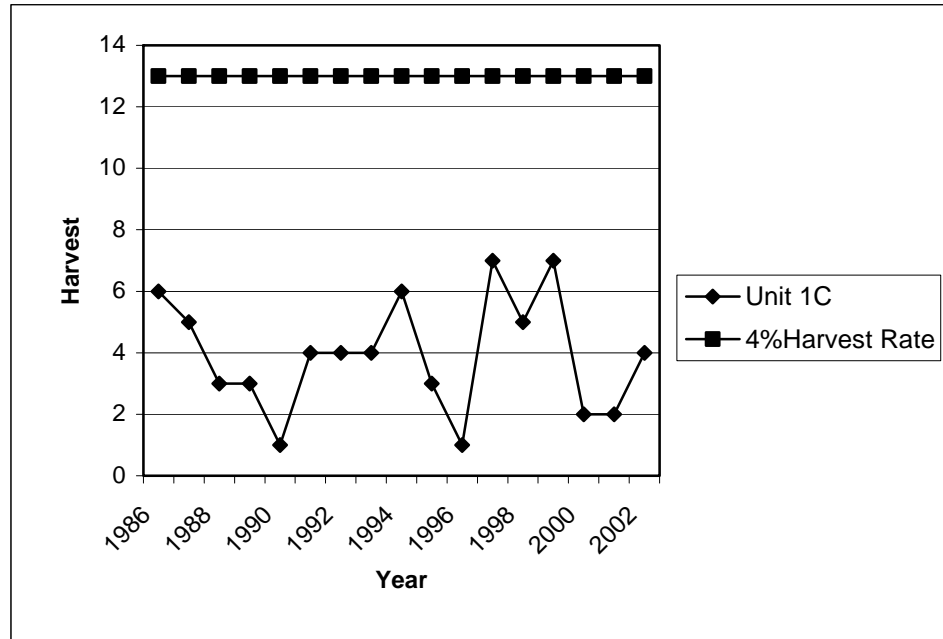
In general, the ADF&G reports conclude that brown bear populations in GMUs 1 and 4 are stable and the objective to harvest males of at least 6.5 years is usually met. It has been more difficult to meet the male-to-female harvest ratio of 3:2 and to reduce the number of bears killed due to garbage habituation.

Concerns have been raised that as the number of guided brown bear hunts increases, brown bear harvest levels will not be sustainable.

Tables 3-34 and 3-35 and Figures 3-3 through 3-7 display brown bear harvest, hunter success, and residency by Game Management Unit (GMU) in the project area. Available ADF&G data, which varied in format, was used to generate the tables and figures.

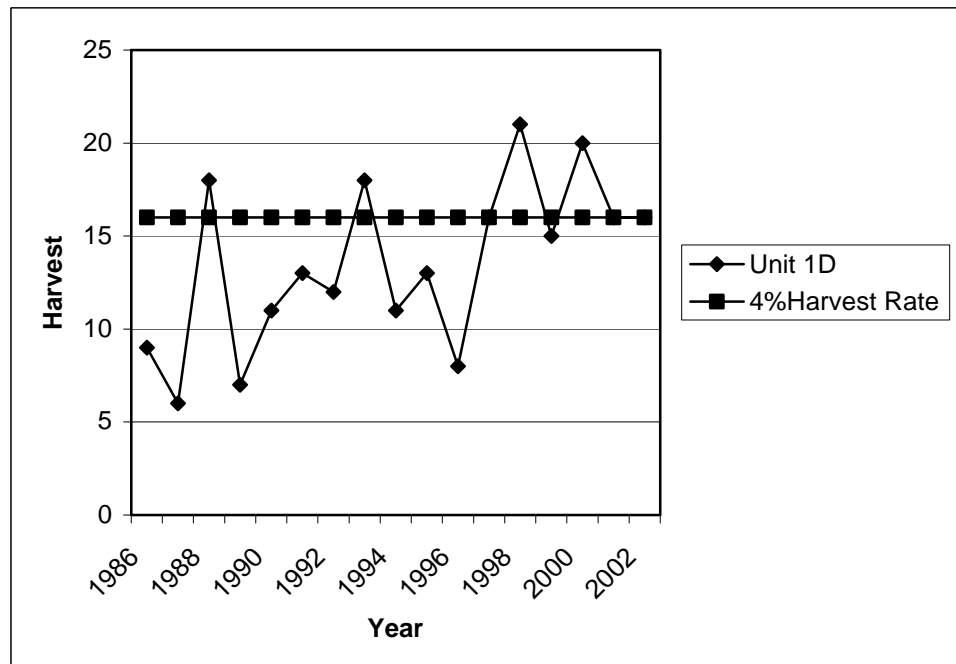
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Figure 3-3. GMU 1C, Brown Bear Harvest 1986–2002



Source: ADF&G

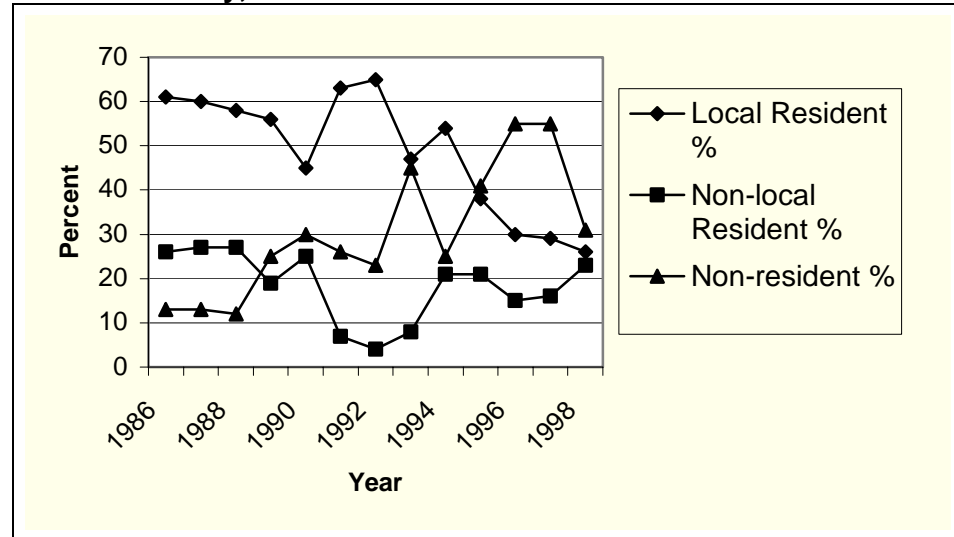
Figure 3-4. GMU 1D, Brown Bear Harvest 1986–2002



Source: ADF&G

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Figure 3-5. GMU 1, Percentage of Successful Brown Bear Hunters, by Their Residency, 1986–1998



Source: ADF&G

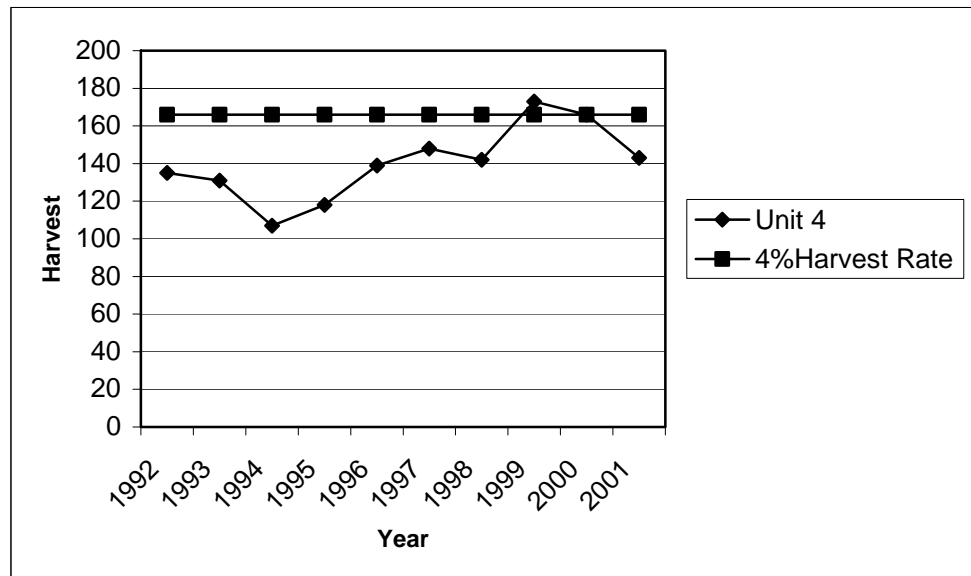
Table 3-34. GMU 1, Percentage of Successful Brown Bear Hunters, by Their Residency, 1986–1998

Year	Local Resident %	Non-local Resident %	Non-resident %
1986	61	26	13
1987	60	27	13
1988	58	27	12
1989	56	19	25
1990	45	25	30
1991	63	7	26
1992	65	4	23
1993	47	8	45
1994	54	21	25
1995	38	21	41
1996	30	15	55
1997	29	16	55
1998	26	23	31

Source: ADF&G

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Figure 3-6. GMU 4, Brown Bear Harvest 1992–2001, Compared to Four Percent Harvest Rate



Note: Figure shows ADF&G recommended harvest rate of 4 percent or less (166 bears) in relationship to the actual harvest, as follows: 1992=135; 1993=131; 1994=107; 1995=118; 1996=139; 1997=148; 1998=142; 1999=173; 2000=166; 2001=143.

Source: ADF&G

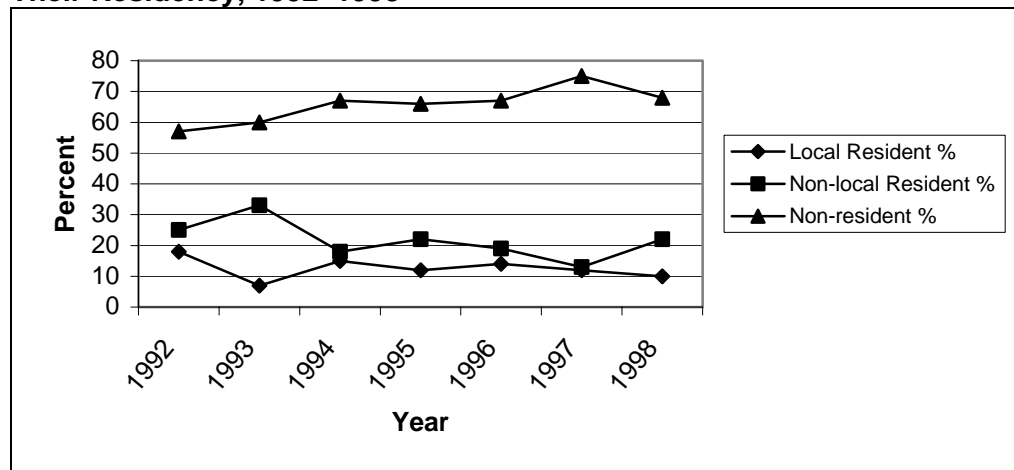
Table 3-35. GMU 4, Percentage of Successful Brown Bear Hunters, by Their Residency, 1992–1998

Year	Local Resident	Non-local Resident	Non-resident
	%	%	%
1992	18	25	57
1993	7	33	60
1994	15	18	67
1995	12	22	66
1996	14	19	67
1997	12	13	75
1998	10	22	68

Source: ADF&G

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Figure 3-7. GMU 4, Percentage of Successful Brown Bear Hunters, by Their Residency, 1992–1998



Source: ADF&G

Bald Eagle, *Haliaeetus leucocephalus* The highest densities of bald eagles in North America are in Southeast Alaska. The most recent adult population estimate (1992) was more than 13,000 adult birds; more than 8,000 nest sites were identified in a 1996 survey throughout Southeast Alaska. Almost 4,000 identified nest sites are located in the analysis area. Large portions of the analysis area shoreline zone have not been specifically surveyed for additional bald eagle nest sites because commercial recreation use is not expected to disturb eagle nesting habitat. Nesting habitat is primarily old-growth trees in riparian areas in close proximity to the coast. Over 90 percent of the known nests on the Tongass National Forest are within 500-feet of salt water (USDA Forest Service 1997).

There is a concern that guided recreation use may disturb and otherwise harm individual bald eagles, especially during the nesting season. Humans or machines, with the degree of response dependent on the proximity of disturbance, may disturb nesting bald eagles. Energy used in response to disturbance would be better spent caring for eaglets.

The Bald and Golden Eagle Protection Act of 1940 is the primary law that protects bald eagles in Alaska. In order to ensure that forest management activities do not result in a violation of the law, the USFWS and Forest Service maintain an interagency agreement for bald eagle habitat management in the Alaska Region. The agreement includes standards and guidelines for regulating human disturbance within identified bald eagle use areas. All identified eagle nest trees are surrounded by minimum 330-foot radius protective habitat management zone (USFWS and USDA Forest Service 1990). See Appendix C Mitigation Measures for additional information.

Other Wildlife Concerns and Opportunities

Marine Mammals The presence of people, especially recreating in large groups, can disturb marine mammals on land. The National Marine Fisheries Service (NMFS)

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provided known locations of harbor seal (*Phoca vitulina*) haul-outs within the project area (NMFS 2001).

Bear-viewing Opportunities There have been requests for additional areas for viewing bears. This analysis identified potential bear viewing sites (Table 3-36). However, the actual development of any bear-viewing sites will require additional planning in a separate environmental analysis. The Brown Bear Management Strategy (see Environmental Consequences below) also provided recommendations and management guidelines for developing new bear viewing areas. These recommendations and management guidelines will be considered in a future analysis.

Table 3-36. Potential Bear-viewing Sites

Bear Viewing Opportunity	Sitka R.D.	Hoonah R.D.
Saook River Estuary	X	
Saook River Mouth	X	
Saook River Trail	X	
North Hoonah Sound	X	
Kadashan River Estuary	X	
Camp Coogan	X	
Nakwasina	X	
Fick Cove	X	
Sitkoh Bay	X	
Wukuklook Creek		X
Kennel Creek		X

Migratory Birds None of the alternatives is anticipated to have a direct, indirect or cumulative effect on any migratory bird species population in the Shoreline Outfitter Guide analysis area or elsewhere, although individuals or small groups and their nests may be impacted. Nesting birds that are repeatedly disturbed by people in proximity to the nest could abandon the effort. These impacts are expected to be so small that they cannot be measured.

Environmental Consequences

Wildlife Habitat

All the wildlife habitats described earlier are represented at least to some degree within the analysis area shoreline zone. All of the alternatives include recreation management activities within these habitats. There is currently no standard methodology to measure direct impacts on habitat quantity or quality as a result of recreation management activities over the short or long term. Based on current knowledge and a review of data, historical outfitter/guide use in the analysis area has not shown measurable effects on wildlife populations. Biological Evaluations (BE) and Biological Assessments (BA) from past recreation management projects have shown no effect to wildlife populations or habitat.

Some very minor effects on vegetation due to trampling could influence wildlife habitat. Potential indirect effects on wildlife species from guided recreation activities include short-term displacement or avoidance of habitats by those wildlife

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species that tend to avoid people and machinery. Avoidance will continue until people and machines leave the area. Generally, this would be a short-term impact, amounting to a few hours per day or week and widely scattered throughout the analysis area. While individual animals may avoid an area with humans, these dispersed short-term activities are not expected to result in any substantial increase in the risk that viable populations will not be maintained over time.

Maximum commercial recreation use levels range from approximately 2,500 group days to 40,658 group days per year (Table 3-12). If the total recreation carrying capacity is used (USDA Forest Service 2001) as an estimate for total recreation use levels for both guided and unguided recreationists, 81,316 group days per year could potentially occur within the analysis area.

These recreation use levels are within levels anticipated by the Forest Plan. Recreation use is unlikely to approach these levels in the near term. The recreation use that does occur will be of low impact, short duration and will not adversely affect wildlife habitat. This use will be dispersed across the shoreline zone of the analysis area of over one million acres and over 5,000 miles of shoreline habitat. Mitigation measures (Appendix C) have been identified to reduce or eliminate impacts.

If the total commercial use allocation were used as a measure for the potential risk of negative effects to wildlife habitat, higher allocations would provide potentially higher use levels. These higher use levels could result in higher potential risks for negative effects on wildlife habitat. Alternative 3, with the highest allocation (39,297 group days, or 50 percent of the total), would have the highest potential risk. Alternative 5 (17,530 group days, 23 percent of the total) would have the second highest, closely followed by Alternative 2 (16,175 group days, 21 percent of total). Alternative 4, with 6,059 group days (8 percent of the total) would have the lowest risk. Alternative 1 does not make a specific allocation, but could potentially be up to 50 percent of the carrying capacity, providing a risk equal to Alternative 3.

There are specific areas that could have higher or more concentrated levels of use or people recreating in larger group sizes at certain times of the year, which could have more potential to affect wildlife. Alternatives 3, 4, and 5 propose large group areas that vary in number, size, and type and that differ in times of use permitted during the year. These large group areas are dispersed throughout the analysis area to avoid concentrations of high recreation use, and they are generally located to minimize impacts to wildlife habitat.

Alternative 3 has the most sites allowing large group use (46) followed by Alternative 5 (36) and 4 (15). Alternative 1 and 2 do not propose large group areas. As more groups use these areas, the risk that individual animals may be disturbed and leave these areas will increase. See Tables 3-13 through 3-15, for acres, Use Areas, and summaries of large group area types and amounts.

The alternatives vary by timing of commercial use. Enclave areas allow daily large group use while Fifteen-Percent Areas only allow large group use periodically up to 15 percent of the season (approximately one day per week). Alternative 3 would allow large group use in Enclaves and Fifteen-Percent areas in all seasons. Alternatives 4 and 5 would allow large group use in Enclaves in all seasons but would only allow large group use in Fifteen-Percent Areas during the summer season.

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Management Indicator Species

Bald Eagle The bald eagle and riparian forest-wide standards and guidelines are specifically designed to protect nesting habitat for bald eagles. Bald eagle standards and guidelines and mitigation measures have proven effective as demonstrated by the high numbers of birds and stable population size. Therefore, no significant impacts that could lead to federal listing of bald eagles are expected from any of the alternatives.

Brown Bear The effects of non-consumptive recreation activities on brown bears, such as viewing from boats (ranging from cruise ships to one-person kayaks), airplanes, and helicopters, or established bear-viewing areas are not well understood. Other recreation activities such as bike riding, sightseeing, camping, hiking, picnicking, and fishing that occur in brown bear habitats may also have an effect. It is difficult to predict the degree to which the presence of people recreating within brown bear habitats will disturb individual bears or cause long-term population viability problems.

The Forest Plan Record of Decision (ROD) concluded “that the old-growth strategy and specific species management prescriptions represent a balance of wildlife habitat conservation measures which consider the best available scientific information and, within an acceptable level of risk inherent in projecting management effects, will provide fish and wildlife habitat to maintain well-distributed viable populations of vertebrate species in the planning area, and maintain the diversity of plants and animals.” (ROD, pp. 35–36). Specific to brown bears, the Forest Plan EIS states, “Alternative 11 (the selected alternative) likely presents the highest likelihood of maintaining viable long-term brown bear populations due to the extensive reserve system...” (p. 3-418). Specific to recreation and tourism, the ROD states “...the resource standards and guidelines and the changes in LUD allocations reflected in Alternative 11 (the selected alternative) are sufficient to maintain recreation and tourism opportunities throughout the Forest” (p. 22).

As human populations increase and more people go to their national forests for recreation opportunities, research has begun to focus on impacts of these activities on wildlife. The Montana Chapter of the Wildlife Society prepared the comprehensive *Effects of Recreation on Rocky Mountain Wildlife, A Review for Montana* that included all of the vertebrate land species found in Montana (Joslin and Youmans 1999).

The chapter titled “Carnivores” includes a section on grizzly bears that concluded that, “Grizzly bears are sensitive to human disturbance. However, they will readily habituate to ongoing and predictable human activity” (p. 7.26). It further states, “bears in multiple-use forest and wilderness environments are generally not subjected to ongoing and predictable patterns of human activity, thus they will avoid areas with heavy motorized or foot traffic and high road or trail densities” (p. 7.27). Interactions with brown bears can lead to habituation, which usually results in a dead bear or, occasionally, an injured or dead human. In general, the effect of motorized or foot traffic on bears was considered negative. This review noted that there are few studies quantifying the negative effects of foot traffic on bears (p. 7.27).

There has been little research in this area in Southeast Alaska. Currently, Southeast Alaska Wilderness Education and Discovery (SEAWED), a private organization

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interested in the management of the Tongass National Forest, has proposed a brown bear disturbance project on northwest Chichagof Island. The proposal is under review to determine if it will meet peer review standards and will provide useful scientific data. The ADF&G has also expressed interest in developing studies to determine if human effects on bears are a concern.

A cooperative study was conducted during the spring and summer of 2002 in the lower Lake Eva drainage. The purpose was to investigate how Lake Eva Trail should be managed to provide wildlife viewing and other natural experiences for humans without disrupting use of the area by brown bears (Van Dyke, 2003). The study developed methodologies to record human and bear use levels, activities, and interactions and surveyed important brown bear habitats, travel corridors, and timing of uses. The study's management considerations provided the rationale to defer the Lake Eva Trail from consideration as a bear viewing area. We continue to work cooperatively with ADF&G to determine if this study's methodologies can be used to evaluate other potential viewing sites.

The short-term recreation use proposed in this analysis is not expected to have any impacts on brown bear habitat, which is protected by Forest Plan standards and guidelines. However, guided recreation use could result in human–bear interactions that could have impacts on bear populations and individuals. The adoption of many of the recommendations from the Brown Bear Management Strategy (BBMS) will help mitigate such impacts. A discussion of the BBMS follows:

Brown Bear Management Strategy In 1998, the Alaska Board of Game (ABOG) and ADF&G Division of Wildlife Conservation sponsored a broad group of citizens and agency representatives to develop a *Unit 4 Brown Bear Management Strategy* (BBMS) (ABOG 2000). In November 2000, the ABOG voted to support the recommendations in the BBMS and encouraged the USDA Forest Service to incorporate the team's recommendations in this EIS. Many of the applicable recommendations have been incorporated into the mitigation measures designed to reduce or eliminate negative impacts to brown bears and their habitat (Appendix C).

The BBMS recommended that the Forest Service “Maintain the current moratorium on new hunting guides in Unit 4 until the outfitter/guide analysis for the northern Tongass National Forest is completed.” The Forest Supervisor has maintained the moratorium in Unit 4 and extended it to Unit 1. He also directed that no new applications for brown bear guide permits be authorized until this EIS is completed.

The BBMS also recommended that the Forest Service “Cap the number of guides at the current number (approximately 38); allow the number to decrease by attrition to 20 hunting guides maximum in Unit 4 over the long term.” The Forest Supervisor has capped the number of bear hunting guides until this analysis is complete. The Forest Service will continue to work with ADF&G to determine the appropriate number of hunts necessary to maintain social experiences prescribed by the Forest Plan, and healthy brown bear populations.

Another BBMS recommendation was to “Allocate outfitter/guide use on a client/hunt, rather than a service-days, basis.” The Forest Supervisor has directed that brown bear hunting guide permits be authorized by number of clients by species hunted, or “hunts authorized” (one client equals one hunt). However, as noted earlier in this section, a ‘hunt’ does not necessarily equal a harvested brown bear.

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Regarding the number of hunts authorized, the BBMS recommended, “Maintain essentially the same number of nonresident hunters (guided and next-of-kin) as the current annual average (148 compared to a current level of 147) with some redistribution of effort among the Use Areas and an adjustment to allow for next-of-kin hunting effort in some areas.” The BBMS recommended 144 non-resident guided hunts and 4 non-residents hunting with next-of-kin ‘guides’ for a total of 148 hunts. The Forest Supervisor is currently authorizing a maximum of 148 guided hunts on the national forest based on past use with no additional hunts. These 148 hunts plus 4 non-residents (authorized by ADF&G) hunting with next-of-kin provides a total of 152 hunts.

The BBMS recommended to “Allocate guided hunts to the spring and fall seasons based approximately on ADF&G’s data of the historical percentage of use during the seasons.” The Forest Service is currently developing an administrative process to allocate guided hunts between individual guides by location, season, and number of hunts. This is occurring in a separate analysis expected to be finished in 2006. The Record of Decision for this analysis will provide an outline of the administrative process to be used for allocation of guided hunts in areas with competitive interest in limited commercial use allocations.

Historically, Unit 1 non-resident (guided) brown bear hunters have had success rates ranging from a low of 13 percent to a high of 55 percent from 1986 through 1998. Unit 4 non-resident (guided) brown bear hunter success rates ranged from a low of 57 percent to a high of 75 percent from 1992 through 1998. Adopting these BBMS recommendations is not expected to result in higher hunter (guided and non-guided) success rates or other human-caused mortality rates above the sustainable population level because of the mitigation measures built into the management strategy for brown bears. ADF&G must consider all forms of human-caused brown bear mortality, including hunting (guided and non-guided), poaching, and defense of life and property kills (DLP) in managing this resource. The BBMS made several recommendations to the Forest Service and ADF&G that have been adopted to ensure that human-caused brown bear mortality does not exceed sustainable levels. If human-caused brown bear mortality exceeds recommended levels, adjustments in the number of hunters, adjustments in season or bag limits, or instituting drawing permits may be used to reduce mortality to sustainable levels. Restricting or capping the number of guides and the number of guided hunts may result in some additional brown bears available for harvest by resident and subsistence hunters if they choose to take advantage of them and the recommended mortality levels are not exceeded.

Managing guided brown bear hunts within the harvest limits and regulations established by the ABOG and the Federal Subsistence Board will ensure viable huntable populations. These hunts will be monitored annually with these agencies and adjustments or limits on guided hunting will be made if necessary.

Marine Mammals

Several potential large group areas were dropped during the planning process because of their proximity to mapped seal haul-outs. To avoid disturbing seals, there are no developments planned in the alternatives within one mile of any of the mapped seal haul-outs.

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The Forest Plan provides standards and guidelines for marine mammal habitats, including harbor seals (p. 4-114). See the Mitigation section for additional information (Appendix C). These standards and guidelines have been effective in reducing or eliminating impacts to marine mammals and harbor seals specifically. Therefore, no significant impacts that could lead to federal listing of harbor seals are expected from any of the alternatives.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 (amended in 1936 and 1972) prohibits the taking of migratory birds, unless authorized by the Secretary of Interior. Migratory birds do not recognize political boundaries, so it was necessary to develop treaties between the United States, Great Britain, Mexico, and Japan in order to manage the resource. The law provides the primary mechanism to regulate waterfowl hunting seasons and bag limits, but its scope is not just limited to waterfowl. Over 100 species of birds migrate from the lower 48 states to Alaska to breed, nest, and fledge their young. Most of these birds fly to interior or northern Alaska, and only pass through the project area on the way to their breeding grounds. For example, millions of shorebirds use the Stikine River flats and Yakutat Forelands to rest and feed on their annual migrations. There are small numbers of birds, however, that stopover here. Migratory birds utilize most, if not all, of the habitats described earlier for breeding, nesting, and raising their young.

Cumulative Effects

Cumulative effects include natural fluctuations in wildlife populations and harvest from unguided hunters. There are no immediate concerns regarding any wildlife species within the analysis area. The Alaska Department of Fish and Game and the Federal Subsistence Board manage wildlife to ensure sustained huntable populations through the use of hunting regulations. The effects of guided hunting on these populations are monitored. If it becomes necessary to protect any wildlife populations, sport or general hunting harvest, including guided hunting, will be restricted. The regulations and harvest limits imposed on guided hunting will ensure sustainable populations.

Because of the low impacts on wildlife habitat and populations from guided recreation activities and the mitigation measures in Appendix C to reduce or eliminate impacts, the effects on wildlife from guided recreation use over the analysis area as a whole are expected to be minimal for all alternatives. Effects may occur in specific sites receiving concentrated or high levels of use, but these make up a small proportion of the analysis area. These effects would be mitigated. Monitoring will also determine if impacts are higher than expected. If impacts become unacceptable, commercial use will be restricted or use levels will be limited.

Fish Habitat and Water Quality

Overview

Fish are a component of biodiversity in the analysis area. The annual spawning migrations of anadromous fish (such as salmon) are important to the function of many plant and animal communities. Many species of birds, mammals, and fish feed on salmon and their eggs. Black and brown bears and bald eagles depend on spawning salmon and their carcasses for over-winter survival.

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Fish for This Analysis Management Indicators

- pink salmon
- coho salmon
- Dolly Varden char
- cutthroat trout

Others

- sockeye salmon
 - steelhead trout
-

Fish and other aquatic resources on the national forest support subsistence, commercial and sport fisheries, and traditional and cultural values. Abundant rainfall, streams with glacial origins, and watersheds with high stream densities provide a large number and diversity of freshwater fish habitats. Maintenance of this habitat, and associated high water quality, is the focus of state and federal natural resource agencies, user groups, Alaska Native organizations, and individuals.

Legal and Administrative Framework

The Federal Water Pollution Control Act (Clean Water Act) was enacted with the purpose of restoring and maintaining the chemical, physical, and biological integrity of the nation's waters. This Act, along with other land-use laws, enables state and federal governments to protect the "waters of the United States." In addition to laws and regulations, the Forest Service has adopted policies to assure that national forest management meets the intent of these laws. The Alaska Region's Soil and Water Conservation Handbook (FSH 2509.22, R10 Amendment 2509.22-96-1) applies laws and regulations and provides direction using Best Management Practices (BMPs) to ensure that the chemical, physical, and biological integrity of watersheds are maintained.

The Forest Plan standards and guidelines (pp. 4-5 to 4-74) define protection measures for stream and riparian management areas. In 1994, Congress requested the national forests of the Alaska Region to report on the effectiveness of habitat protections for anadromous fish. The report was titled, *Anadromous Fish Habitat Assessment* (AFHA). Forest Plan standards and guidelines will be implemented on all stream courses within the analysis area. These standards and guidelines meet or exceed all of the recommendations of the AFHA Team.

Affected Environment

Fisheries

Within the analysis area, lakes and streams with outlets to saltwater contain all five species of western Pacific salmon, Dolly Varden char, cutthroat trout, steelhead trout, and eulachon. Outfitter/guides target all the above fish species, except king salmon and eulachon, for freshwater fishing. State regulations prohibit harvesting of king salmon in freshwater in most streams in Southeast Alaska. Two sensitive populations of king salmon exist in the analysis area and are addressed under Sensitive Species. The fish considered in this assessment are:

- sockeye salmon (*Oncorhynchus nerka*)
- pink salmon (*Oncorhynchus gorbuscha*)
- coho salmon (*Oncorhynchus kisutch*)
- steelhead trout (*Oncorhynchus gairdneri*)
- cutthroat trout – anadromous and resident (*Oncorhynchus clarki*)
- Dolly Varden char – anadromous (*Salvelinus malma*)

Anadromous fish spend part of their life in freshwater and part of life in saltwater. Salmon lay their eggs in redds (nests) dug in the gravel of streams and beaches. Newly hatched salmon (alevins) live in the spawning gravel attached to their yoke sac. Juvenile salmon emerge from the gravel and are free swimming. The amount of time juvenile fish spend in freshwater depends on the species, genetics, and growth. Pink and chum salmon start their downstream migration soon after

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emergence, while coho, sockeye, and king salmon spend zero to three additional winters in freshwater before migrating to the ocean. Salmon reach maturity in the ocean, returning to their natal streams to spawn and die and start the cycle again.

Pink and coho salmon Since the mid-1970s, generally favorable climate and ocean conditions have resulted in high productivity and high marine survival of salmon (AFHA 1995). Harvests and escapements of wild coho and pink salmon are at historical high levels. Although no immediate concerns about over-fishing of pink or coho populations exist, protective management measures have been applied to one coho population (Table 3-37).

Steelhead trout Steelhead harvests peaked in 1986 and then started a dramatic decline. The ADF&G closed several streams to the harvest of steelhead and placed restrictions on the use of bait starting in the early 1990s. By 1993, ADF&G had closed 48 streams in Southeast Alaska and started monitoring steelhead abundance. In 1994 the Alaska Board of Fish adopted conservative steelhead management regulations of a one fish bag limit, two fish annual limit, and 36-inch minimum size limit for all Southeast Alaska.

Steelhead stocks have stabilized and appear to be recovering in some systems. The reduced harvests in the 1994 regulations and higher marine survival may be the reason for the recent population stability (Jones 2000). Interest in steelhead fishing remains strong, as indicated by an increase in fishing effort, although sport-fish steelhead regulations have reduced harvest.

Cutthroat trout In 1979, cutthroat trout harvests began to decline from over-fishing. ADF&G initiated a stock-monitoring program in the 1980s and proposed a cutthroat regulatory package that was adopted by the Board of Fisheries in 1994. The function of these regulations was to allow cutthroat to spawn at least once, decrease hooking mortality, and increase fish catch and size. Monitoring of these cutthroat trout regulations since 1994 has indicated that populations are recovering, although it is too soon to reach a definitive conclusion. Harvest of cutthroat trout was reduced from more than 10,000, during the 1980s to an average of 5,000 over the past five years. However, total sport catch, which includes both harvested fish and those caught and released, has increased over the past 5 years while fishing effort has remained the same.

Dolly Varden char Like cutthroat trout, Dolly Varden char are found throughout Southeast Alaska and exhibit both sea-run and lake or stream resident life cycles. Little stock assessment information is available regarding Dolly Varden. Because of the lack of information, an emphasis should be placed on monitoring Dolly Varden catch and harvest data.

Sockeye salmon In recent years, ADF&G and the Federal Subsistence Board initiated emergency closures or additional restrictions on nine sockeye runs in the analysis area to ensure a sustainable subsistence fishery (ADF&G Emergency Orders 01-20-01, 01-21-01, 01-10-00, 01-23-00, 01-32-00, 01-28-99, 01-23-98; ADF&G Sport Fish regulations, 2001; and Federal Subsistence Regulations, 2001). These populations are important subsistence fisheries and have been the focus of recent or long-term stock assessments (Table 3-37).

Table 3-37. Streams and Fish Stocks Recently Affected by Protective Management Actions

Location	Use Area	Species	Management Action
Gut Bay drainages	04-01A	sockeye	closed sport fishery
Hoktaheen Lake	04-15	sockeye	increased restrictions*
Falls Lake drainages	04-01A	sockeye	closed sport fishery
Klag Bay	04-14	sockeye	closed sport fishery and increased restrictions
Redoubt Bay and drainages	04-02A	sockeye	closed sport and subsistence fisheries
Silver Bay and Salmon Lake drainage	04-03	sockeye	closed sport and subsistence fisheries
Silver Bay and Salmon Lake drainage	04-03	coho	closed sport fisheries
Sitkoh Lake drainages	04-13	sockeye	closed sport fishery
Surge Bay	04-15	sockeye	increased restrictions
Takanis Bay	04-15	sockeye	increased restrictions

* Increased restrictions refer to both sport and subsistence fisheries.

Riparian Habitat

Riparian habitat is the interface between aquatic and terrestrial ecosystems. Riparian habitat includes water, land, and plants adjacent to perennial streams, lakes, and other water bodies. The components of riparian habitat determine its form and function. The landform and geology determine the basic stream type; riparian vegetation maintains stream bank stability and floodplain integrity; and the water supports vegetation and animal species dependent on the habitat. Riparian vegetation reduces water velocity on the floodplain, and the roots inhibit stream bank erosion. Riparian vegetation also provides shade and leaf and needle litter, which fuels aquatic food chains. Large woody debris (from fallen trees) provides fish cover, creates pools, and provides stream bank protection.

Resource Use

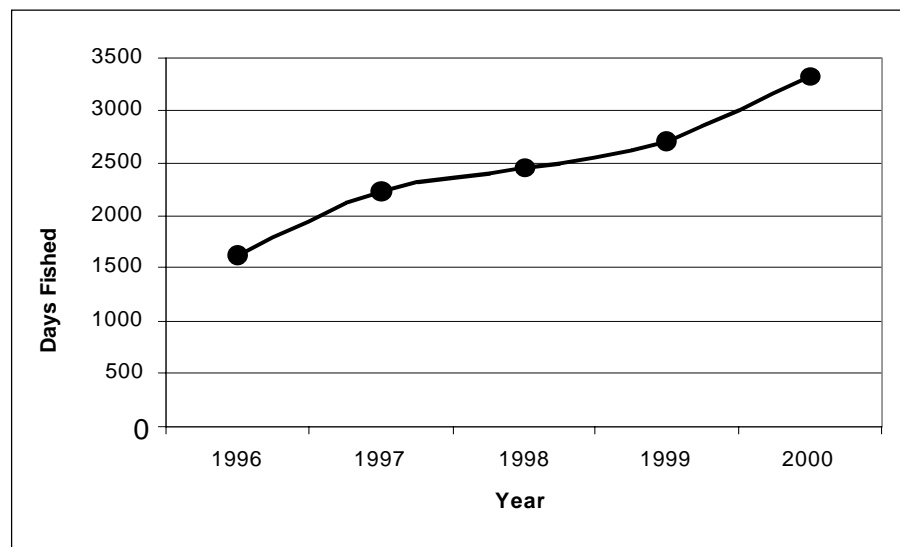
High value fishing streams are used to evaluate effects of commercial recreation used in this analysis. Approximately 2,950 streams flow through the analysis area. Of these, about 1,444 streams (900 miles) are potentially habitat for anadromous fish (Class I). Most of these streams are less than 10 feet wide and support small populations of pink and coho salmon. The preferred fishing streams are typically lower reaches of clear water streams that are 30 to 100 feet wide and flow through several miles of productive salmon habitat. These high-value fishing streams are generally found on low gradient (less than two percent) streams in wide valleys that provide good pedestrian access. In the analysis area, 180 high-value fishing streams were identified. This analysis does not attempt to define streams of greatest value to marine and commercial fisheries. Given the highly mixed stock nature of marine harvest, it would be difficult to categorize the value of individual streams to these user groups.

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There are an additional 1,340 miles of non-anadromous Class II and III streams within the analysis area. Class II streams only support populations of resident fish such as non-anadromous dolly varden and cutthroat trout, while Class III streams do not support fish. Outfitter/guide use has been concentrated on high value fishing streams (Class I) within the analysis area. There would be no negative effect to Class 2 and 3 streams since outfitter/guides spend minimal time or no time fishing them. Historic outfitter/guide use patterns strongly support this assumption. However, watershed and fisheries resource protection will not be limited to high value fishing streams.

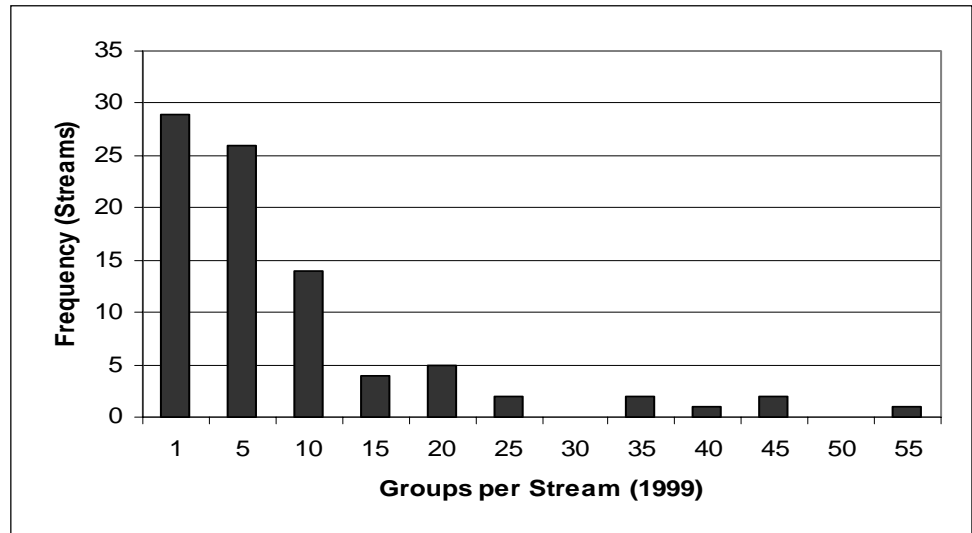
Although guided freshwater sport fishing represents a small percentage (approximately one percent) of the total sport fishing effort in the analysis area and surrounding saltwater, use has steadily increased in recent years. Use records from 1996 to 2000 show guided freshwater sport fishing use has doubled (Figure 3-8). Guided freshwater sport fishing accounted for 25 percent of guided activities in the analysis area during 1999. Where possible, guides appear to be taking their clients to more remote streams. In 1999, approximately 80 percent of guided sport fishing use occurred more than 15 miles from the communities of Juneau, Sitka, Hoonah, Angoon, Tenakee Springs, and Kake. Although a few streams are obviously popular fishing destinations, data from 1999 indicate that most streams were visited by fewer than 15 groups throughout the year (Figure 3-9).

Figure 3-8. Guided Freshwater Sport Fishing Use on the National Forest, 1996–2000



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Figure 3-9. Distribution of Sport Fishing Use on Streams in the Analysis Area During 1999



Environmental Consequences

Direct and Indirect Effects

Overview Recreation use of the national forest, including guided recreation, is expected to increase as the population of northern Southeast Alaska grows. Concentrations of people along and in streams can lead to loss of overhanging banks, loss of stream bank vegetation and acceleration of stream bank erosion, and reduced egg viability and fry survival by disturbing spawning gravels. Increased fishing pressure can affect the sustainability of fish populations.

As outfitter/guide use increases, activity in riparian areas will make up a significant proportion of this increase and will not be uniformly dispersed across forest streams. Although current use levels of outfitter/guides have limited effects on fish habitat and production, approximately 50 percent of outfitter/guide use occurs near anadromous streams. In 1999, outfitter/guides identified 287 sites visited within the analysis area, of which 152 sites were located within one-half mile of an anadromous stream. Freshwater sport fish guides currently use approximately 90 of the 180 high-value fishing streams. Some streams are more attractive to outfitter/guide clients; these streams will receive higher use and increase the potential for adverse resource effects. There would be no negative effects from commercial recreation on Class II and III streams because outfitter/guides spend minimal time on them. However, watershed and fisheries resource protection would be applied to both high value and other streams.

Fish Productivity The potential freshwater fishing effort and harvest varies by alternative. Assuming current use patterns continue (25 percent of guided use is freshwater fishing), Alternative 3, which allows the highest number of groups, would potentially provide the most fishing days (approximately 61,000), followed by Alternatives 5, 2, and 4 (Table 3-38). As a comparison, this represents approximately 25 percent of the total 1999 sport fishing effort (guided and unguided)

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in the analysis area and surrounding saltwater. Although 61,000 fishing days represents a relatively large amount of effort, if current fishing practices persist it may not represent a large harvest. Analysis of 2001 catch and harvest records from freshwater guides estimated two percent of fish caught were harvested; guided sport fishermen typically practice catch-and-release fishing, which has an estimated mortality of 5 percent. Pink salmon and Dolly Varden composed 95 percent of the catch; these returns correspond with the cruise ship season, which provides the primary client base for guided fishing. Because of the low harvest rates projected for all alternatives in relation to the fish populations as a whole, it is not anticipated that implementation of any alternative will negatively affect fish production.

Table 3-38. Potential Guided Freshwater Sport Fishing Effort, by Alternative

Alternative	Estimated Days Fished
1	60,987
2	25,341
3	60,987
4	9,288
5	27,935

Riparian Habitat and Water Quality Direct and indirect effects on riparian habitat and water quality associated with guided recreation use could potentially include: altering or damaging vegetation, discharge of human waste, gray/soapy water discharge, litter, walking in the stream, stream bank erosion, sedimentation, and fuel/oil spills. However, these effects can be mitigated. Many of these effects are associated with camping or concentrated use at campsites.

Outfitter/guide use permits will require compliance with BMPs and mitigation measures. These include BMPs 12.6 (Riparian Area Designation and Protection) and 12.8 (Oil Pollution Prevention and Servicing/Refueling Operations). Mitigation measures (Appendix C) may include camping restrictions, 'Leave No Trace' practices, wading restrictions, and potential watercraft restrictions. When restrictions are necessary, they can be incorporated as stipulations to special use permits that authorize commercial recreation activities. These measures would restrict camping within 100 feet of perennial stream banks, lake shores, and other bodies of water, and require prevention and clean-up of fuel and oil spills. 'Leave No Trace' practices assure the proper disposal of human waste, gray/soapy water discharge, and litter.

Wading (walking in a stream) may kill salmon eggs or fry by direct crushing or disturbing the surrounding gravel. Roberts (1992) found that a single incidence of wading directly prior to hatch killed between 5 and 43 percent of the affected salmon eggs. Wading disrupts and compacts gravel, and slows water flow around eggs. Roberts (1992) recommended wading restrictions be considered where fish populations are limited by insufficient or degraded spawning habitat and where intensive angler wading in spawning areas occurs during egg and pre-emergent fry development. None of the high value fishing streams identified or other streams used by outfitter guides currently meet these criteria. To mitigate potential effects

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from wading, permits will require outfitter/guides and their clients to travel between the high and low water marks (the area periodically de-watered) when practical.

The wake created by motorized watercraft can erode stream banks and the turbulence created by the power head can crush or excavate fish eggs. Studies on the effects of jet boats on salmonids have focused on the physical destruction of eggs and pre-emergent fry, effects of powerhead turbulence, and changes in spawning behavior. Horton (1994) demonstrated that the excavation of the stream bottom, eggs, and alevins by jet boat traffic in shallow water was the most significant form of mortality. At water depths less than 9 inches, eggs, and pre-emergent fry mortality approached 100 percent in the 1 –2 foot zone directly below the boat. Jet boat impacts increase with boat size, amount of traffic, and spawning area traversed; impacts decrease with water depth. Although not commonly used in shallow streams, propeller-driven boats have been noted to create more disturbance than jet-driven boats in water depths of 7–10 inches.

Current motorized watercraft use levels are not considered to have measurable adverse effects on riparian and fish resources. However, increased motorized boat access may cause adverse effects that will need to be monitored. If these effects become measurable by visual observation during permit administration, motorized watercraft will be restricted on a site-specific basis. Restrictions may include permitting motorized watercraft use only in June and July (the period between emergence and spawning); restrictions on boat size and power; limiting use to water depths of three feet or more; limiting speeds to no wake; or excluding motorized use on specific sensitive portions of streams.

No restrictions on the main stems of large glacial streams within the analysis area would be necessary because salmon are unlikely to spawn in these systems. However, some tributary streams may provide spawning habitat. The unrestricted main river systems include:

- Taku River
- Lace and Gilkey Rivers
- Whiting River
- Speel River
- Endicott River
- Katzeihin River

Salmon eggs incubate in stream gravels for days or months until the fry emerge. Developing eggs require an adequate supply of dissolved oxygen for development. Excess sediment fills spaces between the gravel and obstructs the circulation of water and oxygen. Inadequate water circulation and dissolved oxygen extend the incubation period and reduce the size of the fry (Shumway 1964).

Bank erosion and bank building are continual processes in the function of streams; sediment is temporarily stored in pools and point bars until transported downstream during high flows. Wading releases small amounts of sediment, which temporarily clouds the water. Sediment is also released from the erosion of trails and roads. While salmon fry can tolerate short-term turbidity, it is not feasible to predict impacts of specific erosion events on individual fish or fish populations. Recreation activities that may increase stream sedimentation can be evaluated, monitored, and mitigated.

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Footpaths and stream bank erosion are some of the more noticeable signs of recreation use impacts on streams. Properly built and maintained trails within the riparian zone provide access while protecting the stream. However, un-maintained footpaths can promote bank erosion and damage to fish habitat and water quality. Foot traffic can remove the organic layer exposing the soil. Once the organic layer has been removed, rainfall encourages erosion, which is directly influenced by slope and soil texture. Riparian soils are typically mineral in nature and relatively resilient to erosion from foot traffic. The Alaska Region Trails Construction and Maintenance Guide (USDA 1991) has estimated mineral soils can withstand approximately 600 one-way trips without affecting the soil's ability to repair itself from one year to the next. The riparian zone will likely contain pockets of organic soils or low wet spots that will become 'muck' holes at lower use levels. These areas are typically small and isolated and their erosion does not adversely affect fish habitat or water quality. See the Soils and Vegetation sections for additional information regarding affected resources.

Monitoring of some riparian sites outside the analysis area has shown that areas receiving 2,500 or more visitors annually have identifiable adverse effects on fish habitat and water quality due to recreation use. In riparian areas where foot traffic exceeds 600 one-way trips, the potential for adverse effects on fish habitat and water quality is more likely. If travel along a trail or at a site should exceed 600 people (one-way), the site will be evaluated for adverse effects on riparian resources. If riparian resources are being adversely affected, the impacts will be mitigated with BMPs 12.6 (Riparian Area Designation and Protection) and 16.4 (Trail Construction and Maintenance) or recreation use will be restricted.

To evaluate the effects of commercial recreation use on riparian resources (including fish habitat and water quality), sites where use would likely exceed 300 visitors were identified for each alternative. (Because most hikes involve a round trip along the same trail, 300 visitors will approximate 600 one-way trips.) The number of sites with potential adverse effects on riparian resources ranged from 3 to 26 (Table 3-39) among the alternatives. Adverse effects on riparian resources may occur at additional locations if use increases at other sites in the future.

The following assumptions are included in this analysis.

- Sites were identified where use occurred within one-half mile of an anadromous stream (although use may not have actually occurred in the riparian area).
- Sites were identified using 1999 use data (152 out of 287 sites identified).
- Increases in site use by alternative were estimated based on the allocation and historical use patterns.
- While Alternative 1 does not establish a specific allocation, commercial use could increase to up to 50 percent of the recreation carrying capacity.
- Large group areas are also expected to receive higher levels of recreation use in the future. Large group areas containing or adjacent to riparian areas are expected to have more potential to have an adverse effect on riparian resources.

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Table 3-39. Number of Sites Within One-half Mile of a Riparian Zone with Use Estimated to Exceed 300 Visitors Per Year

Alternative	Number of Sites
1	26
2	12
3	26
4	3
5	13

Table 3-40. Number of Fifteen-Percent Areas and Enclaves Within One-half Mile of an Anadromous Stream

Alternative*	Fifteen-Percent Areas	Enclaves	Total
3	12	28	40
4	3	10	13
5	6	22	28

* Alternatives 1 and 2 do not designate Fifteen-Percent areas or Enclaves.

Effects on riparian habitat and water quality from guided recreation use over the analysis area as a whole are expected to be minor for all alternatives.

Summary Of Direct And Indirect Effects If the total commercial use allocation is used as a measure for the potential risk of negative effects on riparian habitat, higher allocations would mean higher risk. Alternative 3 with the highest allocation would have the highest potential risk. Alternative 5 would have the second highest risk, closely followed by Alternative 2. Alternative 4 would have the lowest risk. Alternative 1 does not make a specific allocation but could potentially be up to 50 percent of the carrying capacity, providing a risk equal to Alternative 3. See Table 3-12 for numbers of recreation group days allocated by alternative.

Effects on riparian resources will be mitigated through application of BMPs 12.6 (Riparian Area Designation and Protection) and 16.4 (Trail Construction and Maintenance). Because of the low impacts from guided recreation activities and the mitigation measures and BMPs, effects on riparian habitat and water quality from guided recreation use over the analysis area as a whole are expected to be minor for all alternatives.

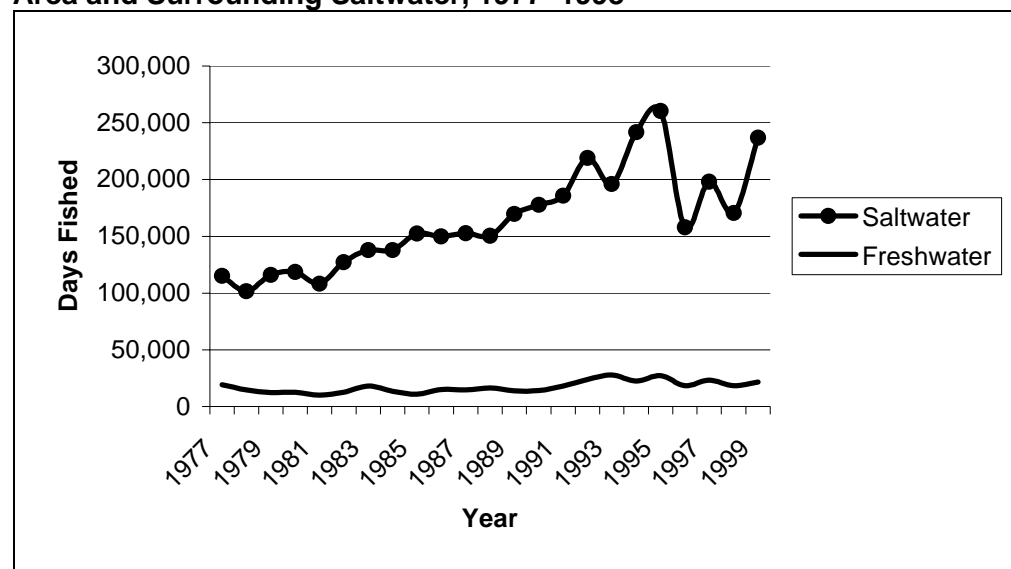
Cumulative Effects

Cumulative effects include natural fluctuations in fish populations and harvest from other users. There are no immediate concerns regarding any fish species within the analysis area. Commercial fish harvest in the waters of Southeast Alaska has fluctuated widely from year to year as the fisheries are managed to meet escapement needs in the face of large natural variations in survivals and returns (Van Alen 2000). Harvest levels and escapements of wild coho and pink salmon are at historically high levels. Wild sockeye and chum stocks are below historical levels but efforts to

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rebuild escapements and returns are working and these stocks are generally healthy. Fluctuations in run sizes are partly attributable to changes in ocean productivity. The productivity of marine waters in the Gulf of Alaska, and the survival of salmon and steelhead trout are both highly variable and cyclic. Since the mid-1970s, generally favorable climate and ocean conditions have resulted in good marine survival of salmon (AFHA 1995). Guided freshwater sport fishing represents a small part of the fish harvest. In the analysis area and surrounding waters, guided sport-fishing accounts for approximately 1 percent of the total sport fishing effort (Figure 3-10). In addition, approximately 90 percent of guided freshwater anglers practice catch and release.

Figure 3-10. Freshwater and Saltwater Fishing Effort in the Analysis Area and Surrounding Saltwater, 1977–1998



Source: ADFG Statewide Harvest Survey Data

Summary of Cumulative Effects Some fish populations within the analysis area are currently near or at maximum sustained harvest levels. Regardless of the alternative implemented, these populations would continue to be managed by the Alaska Department of Fish and Game and Federal Subsistence Board through the use of fishing restrictions to ensure sustainable populations. Current and future fishing effort by guided freshwater sport fishing represents a minimal fraction of the total harvest in the analysis area and surrounding salt waters. The effects of guided freshwater fishing on these populations would be monitored using a catch and harvest logbook.

Overall, adverse impacts from commercial and non-commercial visitors are expected to be minor. However, potential for adverse cumulative effects to riparian resources is highest in those areas where commercial visitation is estimated to exceed 300 visitors per year. Most recreation activities that occur within the project area are dispersed both spatially and temporally resulting in relatively minor effects to riparian resources. Effects on riparian resources can be mitigated through application of BMPs 12.6 and 16.4.

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Essential Fish Habitat

We consulted the National Marine Fisheries Service (NMFS) using the formal and informal procedures of Section 305(b)(2) of the Magnuson–Stevens Fisheries Conservation Management Act (1996) during development of the DEIS. Region and forest-wide standards and guidelines that protect and conserve essential fish habitat would be implemented under this analysis to maintain sustainable fisheries. Essential Fish Habitat (EFH) includes all freshwater streams accessible to anadromous fish, marine waters, and intertidal habitats. This includes all Class I streams, marine waters, and intertidal habitats of the Shoreline Outfitter/Guide analysis area.

The potential for adverse effects on riparian habitat by outfitter/guide activities leads to the finding that the project may adversely affect Essential Fish Habitat. See the riparian habitat and water quality analysis of this chapter for individual and cumulative effects on EFH.

No effects on associated salmon prey species are anticipated by the proposed action. Juvenile salmon are known to feed on aquatic insects, terrestrial insects, salmon eggs, and decaying salmon carcasses.

EFH species that may be affected by Forest Service actions include pink, chum, and coho salmon. Effects on EFH differ by alternative based primarily on the level of commercial recreation use available. As the potential for increased foot traffic in riparian areas rises with available commercial use, the likelihood of soil erosion increases. Sediments originating from soil erosion may adversely affect EFH. Sediments may affect incubating eggs and larvae by reducing water quality and intergravel flow for developing eggs and larvae.

The level of adverse effects will need to be determined through site evaluation and monitoring. Mitigation of these effects will involve compliance with BMPs 12.6 (Riparian Area Designation and Protection) and 16.4 (Trail Construction and Maintenance) and mitigation measures. Application of BMPs will eliminate nearly all effects on EFH.

Threatened, Endangered, and Sensitive Species

Overview

Federally listed threatened and endangered species are those plant and animal species formally listed by the U.S. Fish and Wildlife Service or the National Marine Fisheries Service under authority of the Endangered Species Act of 1973, as amended. Under the Endangered Species Act, an endangered species is defined as one that is in danger of extinction throughout all or a significant portion of its range. A threatened species is defined as one that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

The Regional Forester of the USDA Forest Service has the authority to designate species as ‘sensitive.’ Sensitive species are those plant and animal species for which population viability is a concern, based on significant current or predicted downward trends in population or habitat capability.

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Affected Environment

Endangered and Threatened Wildlife

The Forest Service consulted with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) as part of this analysis. No plant or animal species listed as threatened or endangered by the USFWS are known to occur within the analysis area.

No plant or animal species listed as threatened or endangered are known to occur within the analysis area.

Several species that are listed as threatened or endangered by the NMFS potentially occur in the general vicinity. One other species in the area has been recently petitioned but denied for listing. Most of these species (blue whale, fin whale, right whale, sei whale, sperm whale and leatherneck sea turtle) live in the open ocean and are not found in the analysis area.

Humpback whales are listed as endangered; they live in the marine environment and do not occur in the analysis area. However, they feed in the shallow, inside waters of the Southeast Alaska panhandle and are more likely than the other marine species to be exposed to human activity.

The Snake River sockeye salmon (*Oncorhynchus nerka*) is listed as endangered. This species does not occur within the analysis area and is not available to sport or subsistence fishing.

The upper Columbia River spring chinook salmon (*Oncorhynchus tshawytscha*) is listed as endangered and some stocks are threatened. These species may feed in the marine waters along the coast of the Tongass National Forest but they do not use local streams to spawn.

The Steller (northern) sea lion is also listed as threatened. Steller sea lions feed in the waters around the analysis area and use specific locations as rookeries or haul-outs. The NMFS identified White Sisters as a critical rookery and Benjamin Island, Biali Rock, Biorka Rock, Cape Cross, Cape Ommaney, Gran (Ledge) Point, Lull Point, and Sunset Island as critical haul-outs. Twenty-seven of the 33 known Steller sea lion haul-outs in the analysis area are on the national forest.

The Kittlitz's murrelet (*Brachyramphus brevirostris*) has been petitioned for listing as endangered. On May 4, 2004 the USFWS published a revised list of species of plants and animals that may warrant protection under the Endangered Species Act. This updated Candidate Species List included Kittlitz's murrelet. These birds forage near tidewater glaciers and the outflow of glacial streams. They nest on talus slopes of high mountains. Known breeding areas within the analysis area include Port Houghton, Endicott Arm, and Tracy Arm. They may also breed near the tidewater glaciers in Taku Inlet and the small glaciers of Baranof Island.

Sensitive Listed Wildlife

The northern goshawk (*Accipiter gentiles laingi*), osprey (*Pandion haliaetus*), Peale's peregrine falcon (*Falco peregrinus pealei*), trumpeter swan (*Cygnus buccinator*), and king salmon (*Oncorhynchus tshawytscha*) of the King Salmon River and Wheeler Creek runs are identified as sensitive species in Region 10 and the analysis area.

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The Northern goshawk is a wide-ranging forest raptor that nests in old-growth forest habitats in Southeast Alaska. Goshawks generally select forest stands with large trees on gentle slopes at lower elevations for nesting and foraging (Reynolds 1989; USDA Forest Service 1990). Although goshawk nests are present in the analysis area, no nests or goshawk territories have been located in or near any of the proposed large group areas or Enclaves.

Osprey usually nest in broken-top spruce trees, either live or dead, and in western hemlock snags. They are found near water since their diet consists mainly of fish. There are no known osprey nests in the analysis area, but osprey may stop at some locations in the analysis area to rest and feed during migration.

Peale's peregrine falcon is a subspecies of the peregrine falcon. It nests on the outer coast along the Gulf of Alaska and is closely associated with large seabird colonies (USDA Forest Service 1997a). Peale's peregrine falcon is not known to nest in the analysis area.

The breeding range of the trumpeter swan is concentrated along the Alaska Gulf coast and wetland areas in central and south-central Alaska (Bellrose 1980). Trumpeter swans that breed in Alaska, winter along the Pacific Coast from the Alaska Peninsula to the mouth of the Columbia River (Bellrose 1980). Each year, swans pass through southern Southeast Alaska in the spring and fall during migration to and from their breeding grounds. Swans that winter in Southeast Alaska usually move to large lakes and estuaries when the weather turns cold. They arrive in mid-October and generally leave for their breeding grounds by mid-April. During the winter of 2000–2001, the Forest Service and USFWS cooperatively conducted surveys for swans in Southeast Alaska (excluding Yakutat Ranger District). Many lakes and ponds in the analysis area have the potential to support nesting swans; however no nesting pairs are known to exist.

King Salmon River and Wheeler Creek populations of king salmon are island run stocks. No other naturally occurring runs of island king salmon stocks are known to exist in Southeast Alaska. All other natural king salmon runs occur on mainland rivers and streams. Both populations are located within the Kootznoowoo Wilderness on Admiralty National Monument.

Sensitive Listed Plants

Eighteen plant species have been designated as sensitive by the Regional Forester for the Alaska Region, 16 of these species occur on the Tongass National Forest. Table 3-41 lists the Alaska Region Sensitive plant species and their status in this analysis. Six of these sensitive plant species are either not found in the shoreline zone of the analysis area or are not affected by recreation use because they occur in aquatic habitats or in tree crevices where they are not likely to be trampled or disturbed. Two sensitive plant species are known to occur in the shoreline zone. Nine species are suspected of occurring in the shoreline zone, and nine could potentially be affected by guided recreation use, including those that are most likely to occur in beach, estuary, and riparian meadows. They are unlikely to be found along rocky or abrupt forest shoreline habitats, or in muskegs, or under forest canopy.

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Table 3-41. Sensitive Plant Species, Alaska Region

Scientific Name	Common Name	Known to occur in the shoreline zone	Suspected to occur in shoreline zone	Potentially affected by guided recreation in shoreline zone	Habitat/Range
<i>Aphragmus eschscholtzianus</i>	Eschscholtz's little nightmare				alpine
<i>Arnica lessingii</i> Greene ssp. <i>Norbergii</i>	norberg arnica		X	X	meadows
<i>Carex lenticularis</i> var. <i>dolia</i>	Goose-grass sedge				alpine/subalpine
<i>Cirsium edule</i>	Edible thistle				south Tongass
<i>Dodecatheon pulchellum</i> ssp. <i>Alaskanum</i>	Pretty shooting star		X	X	rocky shorelines, beaches
<i>Draba kananskis</i>	Tundra whitlow-grass				Chugach N.F.
<i>Glyceria leptostachya</i>	Davy mannagrass		X		shallow water
<i>Hymenophyllum wrightii</i>	Wright filmy fern		X		tree and cliff crevices
<i>Isoetes truncata</i>	Truncate quillwort		X		aquatic plant
<i>Ligusticum salderi</i>	Calder's lovage		X	X	meadows
<i>Papaver alboroseum</i>	Pale poppy			X	gravels, possible in Lynn Canal
<i>Platanthera gracilis</i>	Bog orchid		X	X	wet meadows, muskeg
<i>Poa laxiflora</i>	Loose-flowered bluegrass	X		X	wet meadows, open forest
<i>Pucinellia glabra</i>	Smooth alkali grass				Chugach N.F.
<i>Puccinellia kamtschatica</i>	Kamchatka alkali grass		X	X	upper beach meadows
<i>Romanzoffia unalaschensis</i>	Unalaska mist-maid	X		X	rocky outcrops, streamsides, forest edges
<i>Senecio moresbiensis</i>	Queen Charlotte butterweed		X	X	heath, wet meadows
<i>Stellaria ruscifolia</i> ssp. <i>aleutica</i>	Cicumpolar starwort				alpine/subalpine

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Environmental Consequences

Endangered and Threatened Wildlife

No federally listed threatened or endangered species will be adversely affected by the proposed actions.

Management activities on the uplands that have effects on humpback whale prey species would have indirect effects on the whale populations. No ground disturbance would result from this analysis that would have a negative effect on humpback whale prey. Therefore, the proposed action and alternatives to it would not adversely affect humpback whale populations.

Snake River sockeye salmon do not occur within the analysis area and are not available to sport or subsistence fishing. The proposed action and alternatives would not affect the Snake River sockeye population.

Upper Columbia River spring chinook salmon do not use local streams to spawn. Therefore, this project would have no direct effect on the population. This analysis does not include any large-scale, ground-disturbing activities and would not have any direct effect on chinook salmon prey and would not indirectly cause a reduction in the salmon population.

Many factors are responsible for the threatened status of Steller sea lion populations, most of which are outside the jurisdiction of the Forest Service. One factor within the scope of this analysis is the amount of human disturbance at haul-outs and rookeries on the national forest. No camps would be allowed within one mile of a critical sea lion haul-out or rookery. Therefore, the proposed action and alternatives would not have a direct or indirect adverse effect on the Steller sea lion population.

The Kittlitz's murrelet has been petitioned for listing. The Forest Service will work with the USFWS to protect this species. Several factors are listed as potential causes for Kittlitz's murrelet population declines, one of which is human disturbance on breeding and feeding grounds. These alternatives are not expected to adversely affect the Kittlitz's murrelet population, because little or no guided use is occurring in areas on the national forest where Kittlitz's murrelets occur. If the Kittlitz's murrelet is listed as threatened or endangered, then the activities in these areas will be reconsidered, but the Forest Service does not have jurisdiction over the marine environment used by the murrelet.

Sensitive Listed Wildlife

Although goshawk nests are present in the analysis area, no nests or goshawk territories have been located in or near any of the proposed large group areas or Enclaves. If active nests are discovered in or near these areas, mitigation measures would be applied to prevent disturbance to the nesting pair and their fledglings (USDA Forest Service 1997b, p. 4-116).

There are no known osprey nests in the analysis area. If active nests were discovered in the Analysis Area, Forest Plan standards and guidelines would be followed (USDA Forest Service 1997; p. 4-92).

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Peale's peregrine falcon is not known to nest in the analysis area. If a nest were discovered in the analysis area, Forest Plan standards and guidelines would be implemented.

No nesting pairs of trumpeter swans are known to exist. If nests were discovered in the analysis area, Forest Plan standards and guidelines (USDA Forest Service 1997; p. 4-92) would be implemented.

Both populations of island run king salmon (King Salmon River and Wheeler Creek) are located within the Kootznoowoo Wilderness on Admiralty National Monument. Outfitter/guide permits that would increase harvest pressure on these runs would not be issued (USDA Forest Service 1997; p. 4-92). State fishing regulations prohibit the taking of king salmon in all freshwaters in the analysis area. Anglers target other fish species and use fishing gear that is not attractive to king salmon, and they tend to fish streams that do not support king salmon runs. No harvest or catch of king salmon have been reported from guided activities on these streams. Thus, guided sport fishing would not negatively affect the viability of king salmon in King Salmon River or Wheeler Creek.

Sensitive Listed Plants

No adverse effects from recreation activities are known to have affected Sensitive plants on the Tongass National Forest. Previous biological evaluations and monitoring have not shown adverse effects. Any potential effects would depend on the species and its ability to withstand and recover from disturbance; the time of year, type, location, and duration of use of the recreation activity; and the number of people using a specific site. Potential effects on sensitive plants from guided recreation use come primarily from trampling. Repeated trampling may damage the plant for the current growing season or permanently destroy the plant. Long-term use such as over-night camping will have a greater potential effect than short-term day use. There is a lesser possibility of impacts due to plant collecting. High levels of recreation use during the growing season in areas of potential habitat for sensitive plants increase the potential for impacts to these plants.

Effects on sensitive listed plants can be minimized by avoiding sites where these plants are known to exist and by using mitigation measures to reduce the potential impacts. Guided recreation will not be permitted at site-specific locations where sensitive plants are known to exist.

Sites with likely habitats that receive high levels of recreation use (including large group areas) will be surveyed and monitored during permit administration. If additional sensitive plant locations are found, they will be excluded from commercial recreation use.

There is a potential risk of guided recreation activities affecting unknown sensitive listed plants, but the risk is expected to be minor because of the low impact and short duration of these activities, the relatively low levels of commercial recreation dispersed across a large area, and the application of mitigation measures. Potential impacts would be limited to individual plants and are not likely to cause a trend to federal listing or loss of viability for any alternative.

Higher allocations could result in higher use levels resulting in higher risk for potential impacts on sensitive plants. Alternative 3 has the greatest potential to

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affect sensitive plants because it has the highest allocation during the summer and proposes the most large group areas. Alternative 5 has the second highest potential because it has the second highest allocation and number of large group areas. Alternative 2 has the third highest potential but does not propose large group areas. Alternative 4 has the lowest potential because it has the lowest allocation and has few large group areas. Alternative 1 does not provide a specific allocation, although it could be similar to Alternative 3; however, Alternative 1 does not identify large group areas. For more information, see the Vegetation section in this chapter and the mitigation measures listed in Appendix C.

Karst and Cave Resources

Overview

Cave resources are protected under the Federal Cave Resources Protection Act of 1988. The intent of the Act is to protect cave resources; however, most caves and associated features are integral to karst landscape. The Tongass National Forest manages karst as an ecological unit to ensure protection of the cave resources.

Affected Environment

Karst is a geologic landform underlain by carbonate (limestone and marble) rocks within which a subsurface drainage system has developed (USDA Forest Service 1997; p. 3-82). The carbonate rocks are dissolved by the acidic groundwater to form caves. Most caves in Southeast Alaska are found in karst landscapes. Caves can also be found in other types of bedrock but are generally not as common. Lava tubes and sea caves formed by mechanical abrasion, erosion, and weathering are examples of other types of caves.

The Kennel Creek, Iyoukeen, and the limestone member of the Pt. Augusta formations exhibit karst and epikarst features in the analysis area. These features are more common at higher elevations in the subalpine and alpine habitats. At low elevations, the karst features are often covered by glacial till or uplifted marine sediments. There are only a few areas in the analysis area where carbonate formations in alpine and subalpine habitats are within one-half mile of the shore (Table 3-42).

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Table 3-42. Guide Use Areas with Carbonate Rock Within One-half Mile of Shore

Guide Use Area	Low Elevation (acres)	Alpine/Sub-alpine (acres)
01-02	49.2	0
01-03	4989.5	0
01-05D	234.1	138.6
04-05	1644.5	56.6
04-06A	1844.1	0
04-07	667.1	0
04-10B	929.5	0
04-11	8839.5	501.6
04-12	8228.5	320.7
04-13	621.4	0
04-15	586.8	0
04-16A	240.8	0
04-16B	145.8	0
04-16D	2245.2	67.8

Environmental Consequences

This analysis does not authorize commercial activities within caves. A separate analysis would be needed if an outfitter/guide should propose use of the caves. Therefore, none of the alternatives in this analysis would affect karst or cave resources. Increased recreation use may lead to the discovery of caves, at which time management plans would be developed if recreation use is determined to be appropriate.

Subsistence

Overview

The Alaska National Interest Lands Conservation Act (ANILCA) defines subsistence, in part, as “the customary and traditional uses by rural Alaska residents of wild, renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation” (ANILCA, Sec. 803). ANILCA provides for the continuation of these uses “consistent with sound management principles, and the conservation of healthy populations of fish and wildlife” (ANILCA, Sec. 802). For many rural Alaskans, subsistence is a way of life and also carries cultural and religious meaning.

The analysis of subsistence uses and resources on the national forest, and of potential effects resulting from management activities, is also required by ANILCA (Sec. 810). This analysis typically focuses on food-related resources, which are the resources more likely to be affected through loss or alteration of habitats from land-altering activities. The identification, protection, and interpretation of cultural and historical resources on federal lands are covered under other legislation, including the National Historic Preservation Act (See the Heritage section of this chapter).

The ANILCA 810 analysis focuses on three factors of the subsistence resource: abundance and distribution, access to resources, and human competition for resources. If it is found that a significant restriction on subsistence resources may

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The principal subsistence resources in and adjacent to the analysis area are salmon, trout, shellfish, deer, brown bear, marine mammals, upland birds, waterfowl, furbearers, timber, firewood, and plants.

occur from a specific project or if the project would add cumulatively to a significant restriction for a geographic area, additional analysis and findings are required.

The following discussion and analysis are based on the detailed subsistence information and analysis contained in the Forest Plan FEIS, Chapter 3, Subsistence. See also the Fisheries and Wildlife sections of this chapter for additional information.

The Tongass Forest Plan Revision FEIS provides a comprehensive analysis of subsistence resources and potential effects, both Tongass-wide and for each rural community of Southeast Alaska. That analysis concluded that forest-wide, under full implementation of the Forest Plan, the only subsistence resource that may, in the future, be significantly restricted is subsistence use of deer (Forest Plan FEIS, pp. 3-224 to 3-229; Forest Plan 1999 Record of Decision pp. 58-59).

Guided recreation activities involving the taking of fish and game are considered general or sport uses that are regulated by the Alaska Board of Fisheries, Alaska Board of Game, Alaska Department of Fish and Game, and the Federal Subsistence Board to ensure healthy viable fish and game populations. ANILCA provides a priority for rural subsistence users if any fishing or hunting restrictions become necessary to protect the resource. General or sport uses are the first to be restricted. Federal management of subsistence resources other than fish began on July 1, 1990. Federal management of fish resources in navigable streams began on October 1, 1999.

Affected Environment

Subsistence Resources and Uses

The principal subsistence resources in and adjacent to the analysis area are salmon, trout, shellfish, deer, brown bear, marine mammals, upland birds, waterfowl, furbearers, timber, firewood and plants. Populations and subsistence use of shellfish, marine mammals, furbearers, upland birds, waterfowl, timber, firewood, and plants are not affected by commercial recreation use. Commercial recreation has the most potential to affect subsistence resources when permitted activities involve guided sport fishing and hunting. Historically, guiding hunting in the analysis area primarily involves brown bear hunting with a very minor amount of deer hunting.

Except for deer, use of these wildlife species for subsistence purposes is relatively minor. Forest-wide, measured by weight, deer account for 21 percent of subsistence food resources, and all other land mammals account for 4 percent (Forest Plan FEIS, p. 3-224). Salmon and trout are the principal subsistence fish resources of the area; they are harvested in both fresh and saltwater. Potential effects on these fish and wildlife species as subsistence resources are discussed below. Analyses of fish and wildlife resources of the project area are found under those headings in this chapter.

Sitka Black-tailed Deer Community use of deer for subsistence purposes is well documented and studied for the rural communities of Southeast Alaska (see Forest Plan FEIS, pp. 3-210 to 3-223 and 3-523 to 3-528, Appendix H, and the Deer Harvest Map in the map packet). Community use of specific geographic areas for obtaining deer is estimated by the Wildlife Analysis Areas (WAAs) used by the State of Alaska. Historically, there has been only one outfitter/guide that brings in clients to hunt Sitka black-tailed deer. These hunts are in Guide Use Area (GUA) 04-13

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(northwestern shoreline of Peril Strait). In 1999, eight clients in two groups hunted during the fall season. GUA 04-13 includes all or portions of WAAs 3308, 3309, 3310, 3311, and 3312.

Community use of each WAA for deer is displayed on the Community Deer Harvest map included with the Forest Plan FEIS. Table 3-43 displays the communities that use these WAAs.

Table 3-43. Community Use for Deer by WAA

WAA 3308	WAA 3309	WAA 3310	WAA 3311	WAA 3312
Angoon	Juneau	Haines	Elfin Cove	Haines
Juneau	Ketchikan	Skagway	Pelican	Skagway
Ketchikan	Petersburg	Juneau	Juneau	Juneau
Petersburg	Sitka	Petersburg	Kake	Kake
Tenakee Springs	Tenakee Springs	Sitka	Ketchikan	Petersburg
Wrangell		Yakutat	Sitka	Sitka
Yakutat			Wrangell	Wrangell

Community use is further discussed and displayed in the Forest Plan FEIS in the Communities portion of Chapter 3 (pp. 3-523 to 3-685) and in Appendix H. For each community, Appendix H identifies those WAAs (ordered by highest use to lowest) accounting for 75 percent of that community's deer harvest. No community uses WAAs 3309 and 3312 to obtain 75 percent of their community deer harvest. WAA 3308 is an important area for Angoon (page H-64). WAA 3310 is an important deer hunting area for Sitka (page H-89), Skagway (H-90), and Yakutat (H-95). WAA 3311 is another important area for Sitka residents (page H-89). Table 3-44 displays the average number of deer and percent harvested annually in each WAA by community residents.

Table 3-44. Number and Percent of Deer Harvest, by Community and by WAA

WAA	Community	Number of Deer (%)
3308	Angoon	20 (4.1%)
3310	Sitka	186 (10.3%)
	Skagway	2 (10.3%)
	Yakutat	1 (10.3%)
3311	Sitka	227 (12.2 %)

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Alaska Department of Fish and Game (ADF&G) has ranked Value Comparison Units (VCUs) and communities according to sensitivity to disturbance. Disturbance in this context means any land use activity that could adversely affect subsistence uses and was generally meant to apply to timber management activities. Table 3-45 displays rankings applicable to the analysis area, except for Skagway and Yakutat. Skagway did not have any VCUs ranked in GUA 04-13. Yakutat was not ranked because the ADF&G felt that there were few activities, such as timber harvest, that would adversely impact subsistence uses there.

Table 3-45. VCU Sensitivity to Disturbance, ADF&G Ranking

Community	Lowest	Low	Middle	High
Angoon	VCU 2900			VCU 2450
	VCU 2990			
	VCU 2880			
Sitka	VCU 2490	VCU 2840	VCU 2430	VCU 2450
	VCU 2620			VCU 2460
				VCU 2470
				VCU 2480
				VCU 2850
				VCU 2860
				VCU 2830
				VCU 2820
				VCU 2810
				VCU 2790
				VCU 2660
				VCU 2890
				VCU 2900

Brown Bear Brown bear are considered a subsistence resource (USDA Forest Service 1997, page 3-219); however, the number of brown bears that are harvested for subsistence purposes is so small that data are not collected (USDA Forest Service 1997, page 3-218, footnote 2).

There is a concern that brown bears will not be available in the future for elders to pass on traditional environmental knowledge to young people or to engage in spiritual association with the brown bear. As a result of this concern, in 2000 the Federal Subsistence Board allowed registration permits for up to five brown bears to be harvested for educational purposes associated with teaching customary and traditional subsistence harvest and use practices. To date, no brown bear education permits have been issued.

Fish Table 3-46 identifies 30 locations within the analysis area or adjacent saltwater where subsistence or personal fisheries activities have occurred historically. These sites included those with reported subsistence or personal use salmon harvests from

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1995 to 1999 in household surveys. Information regarding historical subsistence trout, steelhead trout, and Dolly Varden char harvest is not available.

Most subsistence salmon harvest occurs on saltwater, typically with a gill net or seine. Sockeye salmon are the primary subsistence and personal use fish species harvested. Although the amount of actual use of the national forest for subsistence fish harvest is not accurately known, it is assumed that only a small fraction of subsistence harvest occurs on the national forest.

Table 3-46. Average Subsistence/Personal Use Salmon Harvest and Permits Returned to ADF&G by Stream, 1995–1999

Use Area	Site Name	Number of Fish Harvested					# Permits Returned
		Sockeye	Chinook	Coho	Pink	Chum	
04-01A	Falls Lake	970	1	3	26	22	61
04-06A	False Point Pybus	77	0	1	5	0	4
04-01A	Gut Bay	453	0	0	2	1	36
04-04B	Hanus Bay	76	0	0	0	0	7
04-15	Hoktaheen Cove	1,122	0	6	33	42	45
04-15	Klag Bay - fish camp	1,477	0	5	13	4	48
04-12	Kook Lake	288	0	16	13	10	19
04-14	Lake Anna	10	0	0	2	2	1
04-14	Ford Arm	360	0	0	2	2	14
04-14	Fortuna Straits	109	0	0	6	3	10
04-12	Little Basket Bay	22	0	0	0	0	0
04-2B	Necker Bay Lake	5,677	0	0	41	6	103
04-03	Neva Creek	132	0	1	122	436	8
04-02B	Politofski Lake	32	0	0	2	0	2
04-02B	Redfish Bay	728	0	2	1	0	20
04-02	Redoubt Lake	3,760	0	6	14	12	267
04-03	Salmon Lake Stream	188	5	0	52	26	16
04-12	Sitkoh Lake and Bay	31	0	0	38	12	3
04-15	Surge Bay	30	0	0	0	0	3
01-05B	Sweetheart Creek	3,105	1	29	2	180	180
04-15	Takanis Bay	48	0	1	1	0	2
01-04C	Taku River	1,090	20	62	110	3	121
04-11	Neka River	0	0	26	7	8	2
04-12	Pavlof River	0	0	0	16	11	1
04-03	Aleutkina Bay	24	0	0	0	1	1
04-11	Seagull Creek	0	0	0	0	6	0
04-08	Admiralty Creek	0	0	0	20	15	0
04-08	Bear Creek	0	0	0	0	3	0
04-15	Lisianski River	0	0	0	4	0	0
04-16B	Mud Bay River	0	0	1	0	0	0
Total		19,809	27	159	532	805	974

Source: ADF&G subsistence/personal use reports and surveys

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In recent years, ADF&G and the Federal Subsistence Board have imposed harvest restrictions on one coho and five sockeye subsistence fisheries on the Sitka Ranger District (see Table 3-37). Increases in human populations and subsistence harvest levels combined with fluctuations in fish population abundance have led to harvests near or at the maximum sustainable level on these stream systems. Under ANILCA, a priority for use for these fish is provided for rural users if restrictions on harvest are necessary to protect the resource. If further restrictions on use become necessary, then that is the point at which a significant restriction on subsistence uses may occur. Such a restriction could occur from either reduced abundance or increased competition.

Environmental Consequences

Overview

This analysis of effects is based on the ANILCA categories previously mentioned: access, abundance/distribution, and competition.

Populations, habitats, and subsistence use of shellfish, marine mammals, furbearers, upland birds, waterfowl, and plants for timber, firewood, food, and fiber would not be affected by commercial recreation use proposed in this analysis.

Commercial recreation has the most potential to affect subsistence resources when permitted activities involve guided sport fishing and hunting. Historically within the shoreline zone, these primarily involve guided brown bear hunting and guided fishing with a very minor amount of guided deer hunting. No other wildlife hunting is commercially guided in the analysis area. Use of other wildlife species for subsistence purposes is relatively minor and would not be affected by commercial recreation activities. Salmon and trout are the principal subsistence fish resources of the area. The only guided fishing within the scope of this analysis is guided fishing in freshwater occurring on the national forest. Saltwater fishing and fishing on other land ownerships is outside the scope of this analysis.

Access

Most activities proposed in this analysis are short duration recreational uses. These activities should not change or restrict access to the project area for subsistence uses. The area is accessible by boat, floatplane, and, to a lesser extent, roads. Roads currently access the uplands from marine access points scattered throughout the development VCU within the project area.

Abundance and Distribution

With application of the Forest Plan riparian standards and guidelines, BMPs, mitigation measures, and state and federal fishing regulations on commercial recreation use on the national forest, no significant adverse effects on salmon or trout populations or habitats are anticipated as a result of implementation of any alternative and no alternative is expected to add cumulatively to significant adverse effects.

Some drainages on the Sitka Ranger District have populations of coho salmon and/or sockeye salmon at or near maximum sustainable harvest levels. The abundance of fish in these systems will continue to fluctuate from year to year, providing enough fish for all user groups to use in some years and limited or no use for any user group,

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including subsistence users, in other years. There is a possibility of a restriction on subsistence uses on these stream systems regardless of any alternative, including the no-action alternative. The state and the Federal Subsistence Board regulate guided fishing and subsistence use on these systems to prevent adverse impacts on the resource or subsistence use. None of the alternatives would contribute any additional effects to this situation.

With the application of the Forest Plan habitat conservation strategy (including old-growth habitat reserves) and species-specific standards and guidelines, mitigation measures, and state and federal regulations protecting wildlife populations and subsistence use, no significant adverse effects on wildlife populations or habitats are anticipated as a result of implementation of any alternative and no alternative is expected to add cumulatively to significant adverse effects.

There are declines in deer habitat capability within the analysis area, which are measurable and will occur regardless of any alternative in this analysis. These declines represent an anticipated cumulative trend resulting from the harvest of old-growth timber containing deer habitat. The Forest Plan provides measures to minimize declines in deer habitat capability by protecting key deer winter habitat, the most important habitat component in the project area, including: 1,000-foot beach and estuary fringe no-timber harvest zones along all saltwater beaches and estuaries; the application of riparian buffers along all streams; and the location of a small old-growth habitat reserve in each VCU (major watershed). All of these measures result in at least some protection of important deer winter habitat, as well as other subsistence resources.

Competition

In addition to these measures to minimize loss of subsistence resources in the project areas, deer habitat decline must also be put in the perspective of subsistence use of deer in the area. As discussed above, four Southeast Alaska communities Angoon, Sitka, Skagway and Yakutat, rely on subsistence deer harvest in the analysis area for a portion of their subsistence food needs.

Historical deer harvest levels, and potential direct and cumulative effects of full implementation of the Forest Plan (Alternative 11) in conjunction with the anticipated future demands for deer, are displayed and discussed for each Southeast Alaska community in Appendix H of the Forest Plan FEIS. Three levels of deer use are evaluated for each community for those areas (WAAs) the community most relies on:

- use by community residents only,
- use by all rural (subsistence) hunters, and
- use by all hunters (including those from non-rural communities and hunters from out of state, neither of whom are considered subsistence users under ANILCA).

Under ANILCA, rural users are provided priority use if restrictions on use of a resource are necessary. If there are not enough deer available for hunting, guided sport hunting will be the first user group to be restricted to little or no use. Guided deer hunting and subsistence use are regulated by the state and the Federal

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Subsistence Board, whose regulations governing guided hunting will prevent adverse impacts on the deer resource or subsistence use.

In order for a WAA to produce on average enough deer for species viability and for human uses (subsistence and other hunting), deer harvest by humans must not exceed a certain average percentage of the habitat capability for that area. The Forest Plan FEIS (p. 3-537) analysis makes two assumptions in this regard:

- Hunters in areas where harvest or demand is within 10–20 percent of habitat capability may experience reduced hunter efficiency and moderate difficulty in obtaining deer.
- In areas where demand (or current/historical use) exceeds 20 percent of habitat capability, deer harvest may be restricted either directly or indirectly.

The analysis for **Angoon** (1997 Forest Plan FEIS pp. 3-529 to 3-532, and H-64) displays current (historical) use of WAAs 4055, 4054, 4042, 4041, and 3308, where residents of Angoon obtain approximately 75 percent of their average annual deer harvest. WAAs 4055 and 4054 are adjacent to the community of Angoon; WAA 4042 includes the community of Angoon; WAA 4041 is south of WAA 4055; and WAA 3308 lies west of Angoon across Chatham Strait. Current average deer harvest (1987–1995) in all of these WAAs is 455 deer for all hunters, or 2.5 percent of the 1995 habitat capability. By the year 2005 (assuming full Forest Plan timber harvest levels), with habitat capability down slightly and demand up slightly, use by all hunters in these WAAs is projected to be 3.0 percent of habitat capability.

No significant adverse effects on deer populations or habitats are anticipated in these WAAs as a result of implementation of any alternative, and no alternative is expected to add cumulatively to significant adverse effects. Based on short-term cumulative effects of past and predicted future projects, no restrictions on use by subsistence hunters would occur.

After 100 years of full implementation of the Forest Plan (long-term cumulative effects), demand by all hunters in these WAAs is projected to reach 5.5 percent of habitat capability. Thus for long-term cumulative effects of past and predicted future projects, no restrictions on use by subsistence hunters would occur.

The analysis for **Sitka** (1997 Forest Plan FEIS pp. 3-644 to 3-649, and H-89) displays current (historical) use of WAAs 3002, 3001, 3003, 3311, 3310, 3314, 3416, 3104, 3105, and 3207, where residents of Sitka obtain approximately 75 percent of their average annual deer harvest. WAA 3002 includes Sitka; WAAs 3001 and 3003 are adjacent to Sitka; WAAs 3311, 3310, and 3314 are north of Sitka in the Peril Strait area; WAA 3416 is on the outer coast of Chichagof Island; WAAs 3104 and 3105 include Kruzof Island; and WAA 3207 is located south of Sitka. Current average deer harvest (1987–1995) in all of these WAAs is 2,711 deer for all hunters, or 13.4 percent of the 1995 habitat capability. By the year 2005 (assuming full Forest Plan timber harvest levels), with habitat capability down slightly and demand up slightly, use by all hunters in these WAAs is projected to be 16.2 percent of habitat capability.

No significant adverse effects on deer populations or habitats are anticipated in these WAAs as a result of implementation of any alternative, and no alternative is expected to add cumulatively to significant adverse effects. Based on short-term

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cumulative effects of past and predicted future projects, no restrictions on use by subsistence hunters would occur. This is due in large part because the Forest Plan timber harvest activities have not been fully implemented.

After 100 years of full implementation of the Forest Plan (long-term cumulative effects), demand by all hunters in these WAAs is projected to reach 29.6 percent of habitat capability. Regardless of the implementation of any alternative from this project, a significant possibility of significant restrictions on use by subsistence deer hunters could occur in these WAAs in the future, based on long-term cumulative effects of past projects and predicted future projects.

The analysis for **Skagway** (1997 Forest Plan FEIS pp. 3-650 to 3-654, and H-90) displays current (historical) use of WAAs 3836, 3629, 3310, 3002, 4146, 4044, and 4222, where residents of Skagway obtain approximately 75 percent of their average annual deer harvest. WAA 3836 is located on the north end of Admiralty Island; WAA 3629 is located in Tenakee Inlet across from Tenakee Springs; WAA 3310 is located in upper Peril Strait; WAA 3002 includes Sitka; WAA 4146 is located on the east side of Admiralty Island inside Seymour Canal; WAA 4044 is located on the west side of Admiralty Island opposite Freshwater Bay; and WAA 4222 is located on the north end of Chichagof Island. Current average deer harvest (1987–1995) in all of these WAAs is 1,718 deer for all hunters, or 12.7 percent of the 1995 habitat capability. By the year 2005 (assuming full Forest Plan timber harvest levels), with habitat capability down slightly and demand up slightly, use by all hunters in these WAAs is projected to be 15.2 percent of habitat capability.

No significant adverse effects on deer populations or habitats are anticipated in these WAAs as a result of implementation of any alternative, and no alternative is expected to add cumulatively to significant adverse effects. For short-term cumulative effects of past and predicted future projects, no restrictions on use by subsistence hunters would occur. This is due in large part because the Forest Plan timber harvest activities have not been fully implemented.

After 100 years of full implementation of the Forest Plan (long-term cumulative effects), demand by all hunters in these WAAs is projected to reach 28.1 percent of habitat capability. Regardless of the implementation of any alternative from this project, a significant possibility of significant restrictions on use by subsistence deer hunters could occur in these WAAs in the future, based on long-term cumulative effects of past projects and predicted future projects.

The analysis for **Yakutat** (1997 Forest Plan FEIS pp. 3-676 to 3-680, and H-95) displays current (historical) use of WAAs 3315, 3416, 4055, 3629, 3310, 4256, and 3417, where residents of Yakutat obtain approximately 75 percent of their average annual deer harvest. WAA 3315 is located at the mouth of Peril Strait on the south side; WAA 3416 is located on the west side of Chichagof Island; WAA 4055 is located on Admiralty Island south of Angoon; WAA 3629 is located in Tenakee Inlet across from Tenakee Springs; WAA 3310 is located on the north end of Peril Strait; WAA 4256 includes the Pleasant/Lemesurier/Inian Islands; and WAA 3417 is on the north part of Chichagof Island south of Yakobi Island. Current average deer harvest (1987–1995) in all of these WAAs is 1,004 deer for all hunters, or 6.0 percent of the 1995 habitat capability. By the year 2005 (assuming full Forest Plan timber harvest), with habitat capability down slightly and demand up slightly, use by all hunters in these WAAs is projected to be 7.2 percent of habitat capability.

There are declines in deer habitat capability within the analysis area, which are measurable and will occur regardless of any alternative in this analysis.

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No significant adverse effects on deer populations or habitats are anticipated in these WAAs as a result of implementation of any alternative, and no alternative is expected to add cumulatively to significant adverse effects. Based on short-term cumulative effects of past and predicted future projects, no restrictions on use by subsistence hunters would occur.

After 100 years of full implementation of the Forest Plan (long-term cumulative effects), demand by all hunters in these WAAs is projected to reach 13.2 percent of habitat capability. Thus for long-term cumulative effects of past and predicted future projects, no restrictions on use by subsistence hunters would occur.

Subsistence Findings

None of the
alternatives will
restrict subsistence
uses.

None of the alternatives by themselves present a significant possibility of a significant restriction on subsistence use of deer, brown bear, furbearers, marine mammals, waterfowl, salmon, other finfish, shellfish, timber, and plants in the analysis area. No alternative will add cumulatively to significant adverse effects on use of the subsistence resources. This finding is based on the potential alternative effects on subsistence resource abundance and distribution, competition, access, and considering historical use of the project area, public comment and tribal consultations.

There is a possibility of restrictions to subsistence use within some areas of the analysis area, regardless of this project. When the cumulative effects of past and reasonably foreseeable future projects within the analysis area are considered, there is a possibility of a restriction of subsistence uses of deer for residents of Sitka and Skagway in the long-term future. There is a present and future possibility of restrictions of subsistence use of coho and sockeye salmon fisheries in the Redoubt, Hokaheen Lake, Surge Bay, Takanis Bay, Silver Bay, and Salmon Lake stream systems for residents of Sitka. The alternatives proposed in this project will not contribute to those restrictions.

Abundance and Distribution

Guided recreation will not adversely affect abundance or distribution. The Forest Plan, BMPs and mitigation measures protect habitats. Populations are protected by state and federal regulations.

Competition

Subsistence use will not be restricted by competition from guided recreationists. Guided fishing or hunting are considered sport or general uses and will be regulated to provide a priority for subsistence users if any restrictions become necessary to protect the resource.

Access

Guided recreation use will not change or restrict access to the analysis area for subsistence users.

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Heritage Resources

Overview

Heritage resources on the Tongass National Forest include a diverse array of prehistoric and historical sites and are evidence of at least 10,000 years of human occupation and use. Although the exact date of Tlingit occupation is not known, oral histories and ethnographic accounts indicate that the Tlingit have occupied Southeast Alaska for centuries and were expanding their occupation northward at the time of European contact. The Shoreline Outfitter/Guide analysis area encompasses the north half of the Tongass National Forest, excluding Yakutat, and crosses the traditional boundaries of several Tlingit *Kwans*. The analysis area falls into the traditional territory of the following Tlingit Kwans (listed geographically from south to north): Kake, Sitka, Angoon, Taku, Auk, Hoonah, Chilkoot, and Chilkat. These groups have left their mark on the land evidenced by a variety of sites: villages, seasonal campsites, rock art, sacred and religious areas, and subsistence places.

The historical period in Southeast Alaska began in 1741 when Aleksei, a member of Russia's Kamchatka Expedition, sighted land somewhere between Yakobi and Chichagof islands. The Russians brought back sea otter pelts, which sparked fur trade with the Orient. The trade boomed and the British and American traders soon joined in the pursuit of this valuable commodity. The Russian-American Company rapidly built up its presence in Southeast Alaska and established settlements in Yakutat and Sitka. Russia eventually lost control of the sea otter trade, the company became financially strapped and maintaining a presence in Southeast Alaska became less important. Eventually Russia sold the rights to Alaska to the United States. Since then, human enterprises including fishing, whaling, mining, fur farming, tourism, and timber harvest for both wood and pulp industries have developed in the analysis area and have left evidence on the land.

Federal responsibility to manage heritage resources comes principally from the National Historic Preservation Act (NHPA) of 1966, as amended. In this Act, Congress declared "the historical and cultural foundations of the Nation should be preserved as a living part of our community life and development in order to give a sense of orientation to the American people." Other legislation and Executive Orders considered in our analysis includes the Archaeological Resources Protection Act, the Native American Graves Protection and Repatriation Act, the American Indian Religious Freedom Act, Executive Order 11593 (Protection and Enhancement of the Cultural Environment) and Executive Order 13007 (Indian Sacred Sites). Regulations and direction in Forest Service Manual 2360 (Special Interest Areas), and the Forest Land and Resource Management Plan guide the Heritage Program to identify, evaluate, preserve and protect significant heritage resources on a forest-wide and project-specific basis.

Section 106 of the NHPA is the driving force behind the heritage resource analysis for this proposed action. Section 106 requires federal agencies to review the effects of their projects, or undertakings, on heritage resource eligible to or listed on the National Register of Historic Places. Federal agencies are responsible for initiating that review, most of which takes place between the agency and state and tribal officials. Appointed by the governor, the Alaska State Historic Preservation Officer coordinates the State's historic preservation program and consults with agencies during Section 106 review. The Alaska Region of the USDA Forest Service, the

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Alaska State Historic Preservation Officer, and the Advisory Council on Historic Preservation have established streamlined Section 106 review guidelines and stipulations in a Programmatic Agreement (Agreement # 02MU-111001-076, 2002). As part of the required Section 106 review, all identified sites are evaluated against standard criteria for inclusion on the National Register of Historic Places established in 36 CFR 60.4. If a site is determined to be 'eligible', a formal determination of effect is completed per 36 CFR 800. Determinations of adverse effect normally require some form of data recovery to negate the effects or other mitigation measures.

Indian Tribe consultations are an important part of heritage resource management. In Alaska, Indian Tribes, as defined by the NHPA, include federally recognized tribes and village and regional corporations created by the Alaska Native Claims Settlement Act (see Chapter 2 for a list of consulted Indian Tribes). The input received during tribal consultations for this analysis was invaluable in identifying culturally important or sensitive areas and avoiding them or regulating guided recreation management to protect these areas. Tribal government consultation will continue through the annual consultation process with other agencies (Appendix D Monitoring).

Affected Environment

Much of the project area falls within the heritage resource high sensitivity zone, meaning there is a high probability of sites. Despite the large scale of the project area, we consider most of the project area to be within the area of potential effects (APE). An APE, as defined in Section 106 of the National Historic Preservation Act, is the geographic area(s) within which a federal project may directly or indirectly affect the character of heritage resources eligible to the National Register of Historic Places.

Although we consider most of the project area to be within the APE, we focused our field inventories on Enclaves and Fifteen-Percent large group areas. These large group areas are more likely to have an impact on heritage resources due to their relatively concentrated use. Heritage resource surveys to locate and identify sites have occurred in the analysis area over time. Table 3-47 identifies the miles and number of surveys completed since 1986 in each Use Area and the number of heritage resources identified since 1975.

Archeologists have completed 751 heritage resource surveys, including 719 miles of shoreline. A total of 415 cultural sites have been identified in the shoreline zone of the analysis area. These represent the majority of the known cultural sites on the north half of the Tongass National Forest; however, additional cultural sites lie beyond the shoreline zone. A variety of both prehistoric and historic cultural sites have been identified and are represented by cultural sites such as villages, camps, rock art, canneries, fish weirs, homesteads, middens, and fur farms.

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Table 3-47. Heritage Resource Surveys Completed Since 1986 and Sites Identified Since 1975 Within the Analysis Area

Use Area	General Location	No. of Sites	No. of Surveys	Miles of Survey
01-01	Skagway Area	5	5	2.00
01-02	Haines Area	0	2	2.00
01-03	East Chilkats	13	9	15.00
01-04A	Berners Bay	6	11	29.00
01-04B	N. Juneau Coast	13	3	4.00
01-04C	Taku Inlet	4	5	1.00
01-04D	Slocum Inlet	0	1	5.00
01-05A	Taku Harbor	1	2	0.50
01-05B	Port Snettisham	2	2	1.00
01-05C	Windham Bay	14	30	52.00
01-05D	Tracy Arm	4	16	4.50
04-01A	Fords Terror	3	8	3.50
04-01B	Gut Bay, Baranof	6	78	28.00
04-01E	Port Armstrong	0	0	0
04-02A	Redoubt Lake	8	9	2.50
04-02B	Whale Bay	15	22	4.00
04-03	Sitka Area	53	76	76.50
04-04A	Lake Eva, Rodman Bay	8	17	41.50
04-04B	Kelp Bay	16	28	73.50
04-04C	Baranof Warm Springs	1	1	0.50
04-05	SW Admiralty Island	23	35	14.00
04-06A	Pybus Bay	8	14	8.50
04-06B	Eliza Harbor	8	17	6.00
04-07	Gambier Bay	18	38	16.00
04-08	NE Admiralty Island	5	13	10.50
04-09	Seymour Canal	6	16	10.50
04-10A	Greens Creek	4	2	3.00
04-10B	NW Admiralty Island	3	4	2.50
04-11	Hoonah Area	36	41	63.50
04-12	Tenakee Inlet	55	49	129.00
04-13	Peril Strait	36	80	72.50
04-14	Slocum Arm	10	26	5.50
04-15	West Chichagof	22	61	19.00
04-16A	Point Adolphus	0	8	5.00
04-16B	North Chichagof	4	6	2.50
04-16C	Idaho Inlet	3	8	2.25
04-16D	Port Althorp	2	8	3.00
Total		415	751	719.25

Initially, more than 130 large group areas were considered throughout the analysis area. Approximately 90 of these were eliminated for a variety of reasons, including 27 that had heritage resource concerns. There are 49 large group areas (34 Enclaves and 15 Fifteen-Percent areas) remaining to be considered in the different alternatives (Tables 3-15 and 3-16).

Between 2000 and 2002, Forest Service archeologists surveyed 64 large group areas for the presence of heritage resources. The archeologists followed standard field survey procedures dictated by the programmatic agreement (Agreement # 02MU-111001-076, 2002), including the use of subsurface soil probes. A total of 34 heritage resources were discovered in or adjacent to 28 large group areas. We have evaluated all 34 sites for eligibility to the National Register of Historic Places, based

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on specified criteria (found at 36 CFR 60.4). Of these, 21 sites meet the eligibility criteria for the National Register. Most of these are ancient sites represented by buried shell midden deposits or rock art. Others are historic sites, such as a cannery, fox farms, and a World War II cannon emplacement.

Environmental Consequences

Direct and Indirect Effects

Potential effects on the cultural resource due to recreation use come primarily from increased vandalism.

Potential effects on the heritage resource due to human use come primarily from increased looting and vandalism. Cultural sites can be dug up, looted or destroyed. However, outfitter/guide permits require the protection of cultural resources, therefore permitted guided use has little, if any, direct effect. Concentrated recreation use at a site can also cause indirect effects such as site trampling, increased erosion, and disturbance and displacement of cultural artifacts. For example, trampling the surrounding area can result in site erosion or plant cover loss, thereby exposing the site to weathering. Effects on cultural sites from guided recreation can be eliminated or reduced by avoiding the site or by using mitigation measures to reduce the potential impacts.

Outfitter/guide use will not occur uniformly across the analysis area. Potential effects on heritage resources are more likely in areas receiving high levels of use. Effects on heritage resources will be mitigated through avoidance of some sites, oversight and enforcement of pertinent heritage resource laws and regulations, interpretation, site hardening, and use restrictions where necessary.

If the total commercial use allocation were used as a measure for the potential risk of negative effects on cultural sites, higher allocations would provide potentially higher use levels. These higher use levels could result in higher potential risks for negative effects on the heritage resource. Alternative 3 with the highest allocation would have the highest potential risk. Alternative 5 would have the second highest, closely followed by Alternative 2. Alternative 4 would have the lowest risk. Alternative 1 does not make a specific allocation but could potentially be up to 50 percent of the carrying capacity, providing a risk equal to Alternative 3.

Outfitter/guides operate under National Forest System permits that include several heritage resource stipulations. Outfitter/guides, who are also responsible for the actions of their clients, are prohibited from collecting artifacts or disturbing heritage resources. Outfitter/guides also have an affirmative responsibility to report heritage resource discoveries made in the course of their business. Outfitter/guides must comply with all federal laws and regulations including the National Historic Preservation Act, the Archaeological Resources Protection Act and the Native American Graves Protection and Repatriation Act. Non-compliance with permit stipulations could result in permit revocation and/or prosecution under the various federal statutes and regulations.

Beyond the legal prohibitions or requirements, outfitter/guides present an opportunity to not only protect heritage resources but also to enhance their preservation and increase understanding of heritage resource values by their clients and all forest visitors. Several of the large group areas have visible heritage resources that lend themselves to interpretation and visits. We intend to work with interested outfitter/guides to share information about heritage resources that will

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ultimately enhance their client's visit. In return we would expect outfitter/guides to take personal responsibility for the sites' protection and to report new discoveries.

The forest has a successful record working with outfitter/guides to share information about heritage resources in return for assistance in monitoring and recording those very resources. On the Wrangell Ranger District, for example, Forest Service archeologists have offered instruction to area outfitter/guides about the forest's heritage resources. Similarly, the Sitka Ranger District archeologist has cooperated with a local outfitter/guides to accompany passengers on area boat trips and provide heritage resource interpretation. This has been an opportunity to provide reliable information to the tour company and to emphasize that heritage sites are susceptible to damage by visitors. Outfitter/guides can also help us direct people away from sensitive sites or portions of sites. Outfitter/guides have also reported new discoveries made during the course of their travels.

In accordance with Section 106 of the National Historic Preservation Act it was determined that no sites eligible to the National Register of Historic Places or will be affected as a result of the proposed action. The primary mitigating factor is that no ground disturbance will be allowed. Most of the sites are buried below the present ground surface and are not visible. Additionally, permit holders will be encouraged to use *Leave No Trace* principles that include provisions protecting fragile heritage resources. We prepared a detailed report of our determinations (Bowers et al 2003) and submitted it to the Alaska State Historic Preservation Officer. In a letter dated August 18, 2003, the Alaska State Historic Preservation Officer concurred that the National Register eligible sites "will not be adversely affected by the Shoreline Outfitter activities" (Bittner 2003).

We also presented our determinations in a detailed letter to all the affected Indian Tribes. The letters summarized our findings and offered to provide additional information or to meet face-to-face with the Indian Tribe to present more detailed information. We asked that the Indian Tribe notify us if they desired additional information or if they disagreed with our determinations. We received no responses from any of the contacted Indian Tribes.

Outfitter/guide use is not expected to result in the discovery or disturbance of human remains. However, if human remains are discovered, they will fall under the inadvertent discovery provisions of the Native American Graves Protection and Repatriation Act (NAGPRA).

Outfitter/guide use is also not expected to restrict Alaska Native access to traditional religious or spiritual sites that are protected under the American Indian Religious Freedom Act (AIRFA).

Cumulative Effects

Cumulative effects on heritage resources occur through natural erosion, weathering, and decay, as well as from land development and increased visitation. The increased recreation use may expedite erosion and could lead to vandalism. Monitoring known sites would identify site changes and enable early mitigation to reduce cumulative effects. Site interpretation that includes a strong stewardship message could help to prevent future negative site impacts. If large group areas show signs of unacceptable impacts from recreation use, these locations could be excluded from use or the site could be hardened to prevent impacts. Site hardening could include boardwalk or

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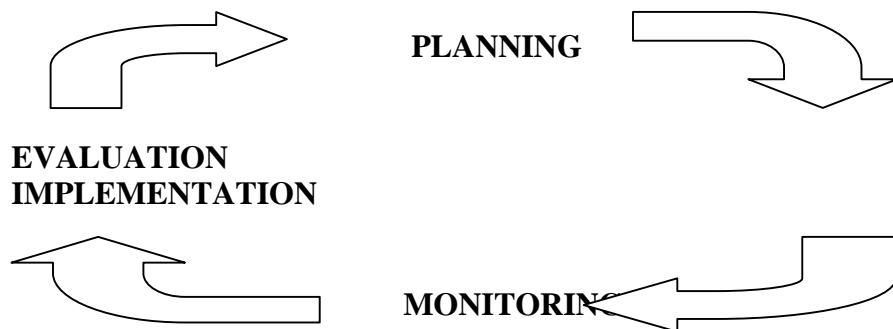
gravel trail construction, fencing, restroom facilities, or other structural features. This would be covered in a future analysis.

Based on past monitoring of known cultural sites and recreation use, no cumulative effect on heritage resources from the commercial recreation proposed in the alternatives are anticipated beyond the natural decaying process. The types of non-ground disturbing recreation activities and the relatively low levels of use over the analysis area as a whole, combined with mitigation measures, administrative oversight, and enforcement of regulations, are expected to result in minimal effects. Specific areas receiving high levels of use will be surveyed and monitored to prevent impacts. The cumulative effects of the alternatives are not likely to result in adverse impacts on the heritage resources because of avoidance measures, mitigation measures, increased administrative oversight, and enforcement of cultural protection regulations.

Heritage Resource Monitoring

This Shoreline monitoring plan recognizes the fact that commercial shoreline recreation activities occur in areas with high sensitivity for heritage resources. Although we have determined the recreation activities will not affect sites eligible to the National Register of Historic Places, monitoring can help assure that operation of such activities do not adversely affect heritage resources through soil disturbance, rutting, compaction and erosion. Monitoring also addresses issues of commercial use that may increase the potential for deliberate looting or inadvertent disturbance of fragile sites.

Little is known about the effects of recreation use on heritage resources. We determined that given the provisions of no allowed ground disturbance and the use of *Leave No Trace* principles that no heritage sites will be affected. Most of the archeological sites are buried below the ground surface sufficiently to provide a layer of protection. Our intent is to use an adaptive management approach as we gather objective information on the potential effects of commercial recreation use. Monitoring strategy will evolve as we implement the plan, collect monitoring information and evaluate findings.



We will use a different approach to monitoring Large Group Areas than we will in the larger analysis area.

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Large Group Areas (Enclaves and Fifteen-percent areas)

Each Large Group Area has been inventoried for the presence of heritage resources. A total of 28 Large Group Areas are known to have heritage resources within their boundaries. We intend to monitor the condition of each Large Group Areas, regardless of site presence, at least once over the life of the NEPA analysis (five years). We will monitor Large Group Areas with known sites more frequently, determined on a case-by-case basis by the Zone archeologist. Some Large Group Areas may be monitored on an annual basis. We will consider several criteria in determining the frequency of monitoring, including the type and vulnerability of known sites and the proximity to population centers.

Monitoring will follow standard protocols. Archeologists will conduct a visual inspection of the Large Group Area, focusing particular attention on areas with known heritage resources. Soil probes and other subsurface tests may be used to determine the integrity of buried sites. Photographic reference or waypoints will be established at each monitored location to serve as a visual baseline as future visits are made. Information gathered during monitoring will be recorded on standard forest monitoring forms that will be kept on file. Maps, drawings and other references will also be collected to gauge future site conditions. Over time we hope to enhance our recording and understanding of the forest's heritage resources.

Other Commercial Use Areas

We will use a different approach in the larger analysis area, where the intensity of use is expected to be much lower and more dispersed. This approach is dictated by the large size of the analysis area. It is impractical to expect that the Tongass would be able to complete a heritage resource inventory of the entire analysis area. Also, there is a degree of uncertainty exactly where an outfitter/guide will take clients in a coming season. We intend to defer site monitoring or inventory, in a sense, to an "after-the-fact" assessment of actual recreation use. Once recreation use in a given Use Area exceeds a certain level, we will determine what areas need some form of monitoring or inventory.

Currently we have a fairly good sample of heritage resources across the analysis area and a good understanding of site probability based on over 30 years of field inventory. Archeologists have completed over 750 heritage resource inventories and surveyed over 725 miles of shoreline within the analysis area. A total of 415 heritage resources are known and recorded on the Alaska Heritage Resource Survey. Completing a shoreline survey for the remaining 4,600 miles of shoreline is prohibitive to say the least, both in terms of cost and logistics. Given our understanding of heritage resource distribution across the forest and our assumptions that commercial recreation use will not lead to adverse effects we have designed an alternate approach to heritage resource effects analysis.

Prior to the start of a season, most outfitter/guides are uncertain exactly where they may take clients on any given day. Factors such as weather, sea conditions and the presence of other people all influence ultimately where an outfitter/guide may take clients. All outfitter/guide permit holders will be required to submit annual use and location reports that include: number of days per trip, date of trip, Use Area and a map of specific locations used, number of clients taken on National Forest System

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lands, amount of time spent on the national forest, activities and access type. Average group size is anticipated to usually be less than 12 people.

We will use a “trigger” or threshold tied to actual use to determine areas for monitoring, evaluation or inventory. Because of the scarcity of objective data on the effects of recreation on archaeological sites we will initially take a somewhat conservative approach. Our intent is to require some form of monitoring or inventory when actual use exceeds fifty percent of projected use levels. Projected use levels are a percentage of the total recreation carrying capacity and are estimated for each of the 38 Use Areas. Allocations in individual Use Areas vary between about 10 and 40 percent of the carrying capacity. From 8 to 50 percent of the total recreation carrying capacity would be allocated to commercial use. In other words, analysis suggests the environment can sustain higher levels of use. The final selected alternative is expected to allocate about 15 percent of the total recreation carrying capacity to commercial uses. If that is the case we will monitor any Use Areas exceeding half of that projected use (varying by Use Area, but averaging 7.5 percent of the total recreation carrying capacity).

A cursory examination of the most recent commercial use reports (1999-2001) and a comparison of the preferred alternative identified in the EIS suggests monitoring will be triggered if use exceeds current levels. This seems in line with available forest plan monitoring data collected over the last six years that suggests the forest’s heritage resources are not suffering adverse effects from human activity. For the shoreline analysis, we examined information about two of the most visited Use Areas as reported in the 1999-2001 actual use reports; the Point Adolphus use area on northern Chichagof Island (Hoonah Ranger District) and the Southwest Admiralty Island use area (Admiralty Island National Monument). The 1999-2001 actual use reports account for 130 average group days at Point Adolphus, about one-third of the commercial allocation of 350 total group days assigned in the Shoreline EIS preferred alternative. Under the proposed monitoring strategy we would conduct some form of monitoring or inventory in the Point Adolphus use area if group days annually exceed 175. On the other hand, 1999-2001 commercial use reports for Southwest Admiralty Island account for 114 total group days, which is about 50 percent of the commercial allocation of 223 group days. This suggests that this is one use area that has reached the proposed monitoring threshold and specific shoreline areas may be identified for monitoring. These areas would be chosen based on the commercial use reports for that Use Area.

Each year we will select and review a random sample of one percent of all the commercial recreation use permits along the shoreline. After assessing the annual use report for intensity of use, types of activities and other factors we will determine the need to field check areas used under those permits. In some cases, guided bear hunting for example, we may decide the type of activity and intensity of use is not a concern and will not require a field visit. In other cases we may determine the type of activity and intensity of use is a concern given our understanding of heritage resource distribution and include a field check in the next monitoring trip.

We also intend to take advantage of other resource monitoring observations to assess potential effects to heritage resources. Monitoring protocols for sensitive plants, for example, calls for looking for signs of vegetation and soil disturbance, both that may be early indicators of possible impacts to areas with heritage resources. Forest Plan

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soil quality standards (also in Forest Service Manual 2554) will be implemented and the NEPA analysis suggest far less than one-percent of areas will see soil disturbance. We will regularly review the monitoring reports for sensitive plants and other resources to gauge potential heritage resource impacts and to assess the frequency of heritage resource monitoring.

As we collect objective data we will reassess the threshold level using our adaptive management strategy, moving the threshold upwards if we do not observe signs of effects. If we do observe adverse effects we will reassess our determination and take some action. This could result in increased frequency of monitoring, hardening of trails and other recreation facilities, some form of data recovery as adverse effect mitigation or eliminating that area from further use (avoidance). Changes to the threshold will be made in consultation with the Alaska State Historic Preservation Officer, Indian Tribes and others.

Administrative Monitoring

We also intend to monitor the implementation of administrative measures that are critical to the success of this plan. For example, we will track the process of obtaining annual use reports to ensure that the forest's heritage resource staff is receiving the information they need to implement the monitoring strategy.

Air Quality

Affected Environment

Baseline air quality information collected between 1989 and 1992 on the Tongass National Forest, including the Shoreline Outfitter/Guide analysis area, indicates the air quality is generally good (USDA 1994). Exchange of air typically comes from relatively pollution-free air off the Gulf of Alaska. The cool temperature and frequent rains typical of Southeast Alaska cleanse the atmosphere and contribute to the general high air quality. Air pollution in the analysis area arises from area sources, such as the larger communities of Juneau and Sitka. Air pollutants are concentrated by temperature inversion and by places where terrain, particularly mountains, limits atmospheric dispersal. These conditions exist in the Mendenhall Valley in Juneau and formerly in the Silver Bay area in Sitka when the pulp mill was in operation (USDA Forest Service 1994).

The analysis area is governed by the Alaska Ambient Air Quality Standards (Alaska Administrative Code, Title 18, Chapter 50) set forth by the Alaska Department of Environmental Quality (ADEC). The entire Shoreline Outfitter/Guide analysis area is a Class II airshed and does not have specific attainment criteria under the Clean Air Act. The Outfitter/Guide analysis area is exempt from needing an air quality impact analysis because the nearest Class I airshed, Denali National Park, is more than 200 miles away.

Sources of airborne pollutants in the analysis area include homes and businesses in Juneau, Sitka, and the other smaller communities, which expel exhausts from heating, cooking, cleaning, and business operations. Residential and commercial open-air burning occurs in backyards and business lots. Some communities operate incinerators and others have open air burning for trash disposal. Road transportation includes cars, buses, shuttles, and large trucks from neighboring communities. Ferries, barges, and small boats operate year-round. Air traffic consists of small

Class 1 airsheds

(Clean Air Act)—areas subject to the most limiting air pollution restrictions, generally large Wilderness areas and national parks, and some tribal areas.

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planes and helicopters. All of these sources increase during the summer tourist season. In addition, cruise ships dock at Juneau and Sitka between May and September and travel in many of the inlets, bays, and channels in the analysis area. Cruise ship operations produce exhaust that is usually visible as stack emission.

Small inlets in the Juneau area were measured for particulates before and after the cruise ship tourism season for one year in 2000. Preliminary results indicate that ambient air quality remained good to moderate during the tourism season, where many cruise ships entered the Juneau area. Particulates increased 35 percent from pre-tourist season, but remained at healthy Prevention of Significant Deterioration (PSD) levels (PSD less than 100). No air quality alerts are necessary at PSD levels less than 100, which indicates good to moderate air quality (ADEC 2001). These preliminary findings are for one area in Southeast Alaska.

Environmental Consequences

Direct and Indirect Effects

All of the alternatives could have limited, short-term effects on ambient air quality. Such effects, primarily in the form of boat motor emissions, are likely to be indistinguishable from other local sources of airborne particulates, including other boat and motor vehicle emissions, dust, motor vehicle traffic, residential and commercial heating sources, other marine traffic, and emissions from burning garbage. The largest source of emissions from the project is likely to be from the larger tour boats. Four stroke outboard motors, which produce less noise and air pollution than the two stroke motors, are becoming more common on small motorboats. To mitigate the effects on air quality, vessel used by outfitter/guides must comply with all state and federal air quality regulations and ensure that exhaust emissions are within regulatory limits. Campfires used by outfitter/guides will have a negligible effect on air quality because only a few outfitter/guides would be building campfires and these would be widely dispersed throughout the analysis area.

Assuming that most of the effects on air quality would come from combustion engines used for commercial access to the shoreline area and that the amount of emissions is directly related to the number of people being guided, the higher the commercial use allocation, the more the potential for effects on air quality. Therefore, Alternative 3 would have the higher potential of having short-term effects on ambient air quality, followed by Alternatives 5, 2, 4, and 1.

Cumulative Effects

Depending on the number and frequency of cruise ships and other motor vessels entering the bays and inlets of the area, pollutants may accumulate in any one or a number of sites. Because of the overall air circulation and high amount of precipitation of Southeast Alaska, it is unlikely that cumulatively, these pollutants will reach quantities that exceed ambient air quality in the analysis area.

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